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PROPOSED FISCAL YEAR 1989 BUDGET REQUEST
(Department of Energy)

HEARING

BEFORE THE

COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

SECOND SESSION

TO REVIEW THE PRESIDENT'S PROPOSED BUDGET FOR FISCAL YEAR 1989 IN CONNECTION WITH THE PREPARATION OF THE MARCH 25 REPORT TO THE SENATE BUDGET COMMITTEE

MARCH 1, 1988

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PROPOSED FISCAL YEAR 1989 BUDGET REQUEST

(Department of Energy)

TUESDAY, MARCH 1, 1988

U.S. SENATE,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The committee met, pursuant to notice, at 2:15 p.m., in room SD-366, Dirksen Senate Office Building, Hon. J. Bennett Johnston, chairman, presiding.

OPENING STATEMENT OF HON. J. BENNETT JOHNSTON, U.S. SENATOR FROM LOUISIANA

The CHAIRMAN. The hearing will come to order. As we enter the twilight stage of the Reagan Administration, there are one or two really sad chapters, and one of those is that this will be the last budget hearing for our distinguished Secretary of Energy, John Herrington.

Secretary Herrington, it has indeed been a pleasure working with you through these years. Not that we are saying good-bye with this hearing, but we are at least saying good-bye to our budget hearing of which this is the last. It has been a pleasure having you here.

Now, having said those good things, let me say something critical on another issue. And that has to do with the energy security report of last year. As you know, we differed on that very strongly, because your report concluded that a $10 a barrel fee on imported crude oil would cost the Nation over $150 billion. And therefore you said it was a very terrible idea.

Now, many of us suspected that the result of that study made by the Department of Energy was pre-ordained by the assumptions which had been made. As they say in the computer trade, junk in, junk out.

We have a distinguished economist, Karl Hausker, who has reviewed your study. I am releasing Dr. Hausker's report today. It describes the flawed assumptions made by the Department that biased its analysis in coming toward the conclusion that the oil import fee carries far more costs than benefits.

For example, the report made no attempt to distinguish oil import fees where the money stays in the country, as opposed to oil price increases, oil is bought from outside the country, where the money goes outside of the country. Obviously, there is a basic difference between whether money stays inside the country or outside the country.

The report assumed that the economy never adjusts to the price increase. The shock to the economy is the same year after year, according to the report.

The report assumed an oil supply disruption in 1995. Events in the past year have shown how continually volatile the Middle East is. A disruption could, in fact, come much sooner. We hope it will not. But it could.

Now, using more defensible assumptions, our Committee report estimates that import fees would provide positive net benefits to the Nation's economy. Typically, in the tens of billions of dollars.

Not to mention the fact that it would help save the economies of our oil-producing states, of which mine is a very key part, with unemployment rates still in double digits. The same can be said of Texas, Oklahoma, New Mexico, and other oil states.

So we are releasing this Committee report, prepared by our Committee economist, commend it to you for your careful study, and other than that I am sure we are in complete agreement on everything. And please proceed to describe the rest of our agreements.

[A prepared statement from Senator McClure follows:]

OPENING STATEMENT
SENATOR JAMES A. McCLURE (R-ID)
COMMITTEE ON ENERGY AND NATURAL RESOURCES
TUESDAY, MARCH 1, 1988

Mr. Chairman, I would like to make a brief statement before we hear from Secretary Herrington on the Administration's proposed budget for fiscal year 1989.

Second only to the Department of Defense, the Department of Energy is the largest contract agency within the Federal government. For fiscal year 1989, $16.1 billion are being sought for a variety of activities such as atomic energy defense, energy research and development, the power marketing administrations, and certain business activities, including uranium enrichment. Only $3.7 billion, or 23 percent of the fiscal year 1989 budget are intended for what the Administration terms as energy research and development.

Last year I expressed my concern for the Administration's continuing push to restructure the programs of the Department of Energy to place greater emphasis on national defense programs and basis sciences. While I fully support these programs, the Administration once again proposes to fund them at the expense of various energy research and development programs.

Let us look at what the Administration characterizes as energy research and development for which $3.7 billion is being sought, an implied 18 percent increase. But the gross figures are quite misleading, as this figure includes basic science research which in the past has been shown separately.

By comparison, only $2.0 billion, or 54 percent of this figure, is being sought for what is normally characterized as energy research and development.

I understand the national and international significance of such basic science initiatives as the super conducting super collider and I support its construction. But, as I said last year, Congressional support for this project is important if it is going to be funded in the present budgetary environment. And, once again this year, the Administration proposes to partially fund the super-collider at the expense of other ongoing programs, such as energy conservation and fossil energy research. If Congressional support for this project is to be forthcoming, then the project must be justified on its own merits and the funding provided accordingly.

I cannot let this opportunity pass without commenting on three other matters. First, I must express concern about the proposed reduction for the high temperature gas reactor (HTGR) program. The Congress has clearly identified this program as critical to the development of a second generation nuclear power option.

Second, I must strongly oppose the Administration's proposal to use the DOE uranium enrichment activities as a means to underwrite other Departmental activities; the budget proposes repayment to the Treasury of $91 million of so-called "excess revenues". The Congress already has spoken on this issue in Public Law 100-202, which restricts the use of uranium enrichment revenues to the off-setting of actual program costs. This proposal reopens the issue of debt repayment that has not been resolved by the Congress. This overall issue was addressed by this Committee in S. 1846, which is currently pending on the Senate Calendar.

I would also observe that the Administration once again relies on privatization of the DOE uranium enrichment activities as a source of offsetting receipts. However, I must note that we have yet to receive a specific proposal from the Administration. The legislation reported by this Committee, that I mentioned, also deals with the restructuring of the uranium enrichment enterprise. I would hope that the Administration would work with us to achieve passage of this bill, rather than have us wait until DOE can belatedly transmit a different proposal.

Finally, there is the matter of the adequacy of our current production reactor capacity following the decision to leave the N-Reactor in a cold, standby status. The Department is faced with the difficult, but important, task of selecting a new reactor technology and sites for the construction of new production reactors. It is critical that the process that you follow in arriving at that decision is balanced and farsighted, with input from all concerned parties. The final choice of the technology, or technologies, that will be employed can have tremendous impact on the future of our entire nuclear industry and, indeed, on the security of this nation.

Thank you Mr. Chairman.

STATEMENT OF HON. JOHN S. HERRINGTON, SECRETARY, DEPARTMENT OF ENERGY, ACCOMPANIED BY J. ALLEN WAMPLER, ASSISTANT SECRETARY FOR FOSSIL ENERGY; DONNA R. FITZPATRICK, ASSISTANT SECRETARY FOR CONSERVATION AND RENEWABLE ENERGY; TROY WADE, ACTING ASSISTANT SECRETARY FOR DEFENSE PROGRAMS; ELIZABETH SMEDLEY, CONTROLLER; AND THEODORE J. GARRISH, ASSISTANT SECRETARY FOR NUCLEAR ENERGY

Secretary HERRINGTON. Thank you, Mr. Chairman. To add a couple of things to that, our report showed you are quite correct—in oil-producing states there was a substantial benefit to the economy.

The $10 fee would replace a million barrels a day of U.S. production. I think it brought back 150,000 jobs, which were all very, very good things in States, as you point out quite correctly, that suffered some devastation.

Our problems with that oil import fee were the lost gross national product in the rest of the economy, which we estimated at $32 billion, and lost jobs elsewhere in the economy in the magnitude of 450,000 jobs. We felt that that was not justified.

I will look forward to receiving this report. There is also a Harvard study that disagreed substantially with our report.

But of course, both of these reports I would assume figure the revenue from the oil import fee go to different sources than we figure. But I do look forward to analyzing this and getting back to you later in the year during a hearing or whenever.

We are pleased to present the budget today, Mr. Chairman. We have many of our departmental heads here to answer specific questions.

Our goal in this budget is to meet the Department's responsibility for developing the Nation's energy strength, ensuring national security, and I think we want to keep within the limits that have been imposed by Gramm-Rudman-Hollings and by the 1987 bipartisan agreement, which we call the Budget Summit.

This budget affirms some very, very important Administration and Congressional initiatives that we have all stayed very close to.

Let me turn to the budget itself. The 1989 budget request is $16.1 billion in new budget authority. This is 13.7 percent above the Fiscal Year 1988 budget request. Despite this increase, the budget is part of an overall Administration budget which meets the targets in the Gramm-Rudman ceilings.

I might add that this is one of the largest increases of any department in the Executive branch for this year. Much of the increase is attributable to major budget initiatives such as a doubling of the SPR fill rate, first-year construction funding for the Superconducting Super Collider, and significantly higher funding for clean coal which has already been agreed to by Congress.

Defense, which is a large part of our budget, in fact it was over two-thirds two years ago, is just slightly above 50 percent in this particular budget, $8.1 billion out of $16.1 billion.

The budget includes a major increase for basic science research, due principally to the first year of substantial funding for the Superconducting Super Collider, an essential element of the Administration's initiative to maintain and strengthen the Nation's scientific leadership.

The funding for this project is requested at $363 million for research, development and construction. This funding is not requested at the expense of any other worthy research projects.

In addition to fully supporting the SSC, our request for funding for basic research and development activities increases by more than 6 percent. In future years we expect substantial foreign contributions to the SSC, because of the value of this project to the international science community.

Potential foreign contributors will be watching very closely what this Committee and what the Congressional support does for this project. Final site selection is scheduled for January, 1989, and the project can be completed in 1996, provided the funding is provided as planned.

The CHAIRMAN. What is the total figure you have for that?

Secretary HERRINGTON. For this year, the FY 1989 request is $363 million. Total funding is $4.4 billion.

The CHAIRMAN. $4.4. Is that in what year dollars?

Secretary HERRINGTON. 1988 dollars.

The CHAIRMAN. 1988 constant dollars?

Secretary HERRINGTON. Yes. Another major initiative is the 76 eV Synchroton Light Source at Argonne National Laboratory. This project would help the U.S. maintain its competitive position in such areas as semiconductors, supercomputers, biology, chemistry, and materials.

In other areas of active research, we include the human genome project, which was recently endorsed by the National Academy of Sciences, atmospheric carbon dioxide, and radon projects.

The budget for magnetic fusion increases from $335 million to $360 million in Fiscal Year 1989. The principal activities which account for this budget increase are the Compact Ignition Tokamak Project at Princeton, for which we are asking R&D and construction funds, and design and validating R&D funds for our portion of the quadripartite international thermonuclear experimental reactor activity.

Our nuclear energy R&D is $354 million, up approximately 6 percent. The fastest growing program in this category is the space and defense power systems at $117 million, which is up from $75 million in Fiscal Year 1988.

This program supports a number of space reactor designs to provide nuclear power to support civilian and defense requirements. These projects are jointly funded with a number of other government agencies.

In the remedial action program that is budgeted at $260 million, the Administration will propose legislation to clarify and limit Federal responsibility for future project costs. We have in this particular project noticed a lot of cost growth.

Our request for clean coal technology is $525 million, which has already been agreed to by Congress as an advance appropriation. This is a significant increase over the $199 million made available for Fiscal Year 1988.

Our goal is to put in place the President's complete five-year program, $5 billion, 50 percent Federal and 50 percent private, by having Congress appropriate in advance the remaining $1.8 billion of the total Federal share of $2.5 billion.

The second CCT solicitation went out February 22nd. Assistant Secretary Wampler is here to answer any questions on how that program is being managed.

Our budget requests for fossil, conservation, and renewables R&D are well below the 1988 appropriation levels, but are comparable to our Fiscal Year 1988 requests. The specific requests are $167 million for fossil, $81 million for conservation R&D, $125 million for renewables.

Our request for weapons research, development and testing is $1.9 billion, less than $10 million over Fiscal Year 1988. The three elements of this program are core activities, nuclear-directed energy weapons, and inertial fusion, and they are all virtually level funded.

Senator HECHT. Mr. Chairman, may I interrupt for one moment please?

The CHAIRMAN. Yes.

Senator HECHT. I am sorry I was late, and I have to go for a Banking Committee markup. I have a statement which I would ask unanimous consent to be put in the record, and some questions for Secretary Herrington and his staff.

The CHAIRMAN. Without objection.

[The prepared statement and questions of Senator Hecht follow:]

ENERGY DEPARTMENT BUDGET OVERSIGHT HEARING
STATEMENT AND QUESTIONS FROM SENATOR HECHT

MR. SECRETARY, I JUST WANT TO MAKE SURE YOU KNOW THAT ALTHOUGH I DID MANAGE TO REPEATEDLY AMEND THE NUCLEAR WASTE BILL THAT RECENTLY PASSED THE CONGRESS, I REMAIN PROFOUNDLY DISSATISFIED WITH THE COURSE THIS NATION IS STILL PURSUING WITH REGARD TO HIGH LEVEL NUCLEAR WASTE. DEEP GEOLOGIC DISPOSAL OF UNREPROCESSED SPENT NUCLEAR FUEL HAS NEVER BEEN PROVEN SAFE ANYWHERE IN THE WORLD. IT WILL CERTAINLY BE VERY EXPENSIVE. IN CONTRAST, OTHER NATIONS ARE TODAY SUCCESSFULLY OPERATING REPROCESSING PROGRAMS COUPLED WITH MRS-TYPE FACILITIES. WHAT WE SHOULD BE DOING WITH NUCLEAR WASTE IS REPROCESSING IT, RECYCLING IT, AND PUTTING IT RIGHT BACK INTO CONVENTIONAL NUCLEAR REACTORS AND BURNING IT FOR ENERGY.

WHEN THE SENATE DEBATED THE AMENDMENTS TO THE NUCLEAR WASTE POLICY ACT, ONE OF THE AMENDMENTS I ATTACHED TO THE BILL THAT SURVIVED CONFERENCE WAS A PROVISION THAT THE DEPARTMENT MUST STUDY THE EFFECTS OF NUCLEAR WEAPONS TESTS AT THE NEVADA TEST SITE ON THE SAFETY OF A POSSIBLE REPOSITORY AT YUCCA MOUNTAIN.

I AM GLAD TO SEE THAT THE CONSULTATION DRAFT OF THE YUCCA MOUNTAIN SITE CHARACTERIZATION PLAN INCLUDES THIS WORK. I LOOK FORWARD TO

THE DEPARTMENT FOLLOWING UP ON MY OTHER AMENDMENTS WITH THE SAME RESPONSIVENESS.

MR. CHAIRMAN, I HAVE A NUMBER OF QUESTIONS WHICH I WILL BE SUBMITTING FOR THE RECORD, WHICH RELATE PRIMARILY TO THE DEPARTMENT'S HIGH LEVEL NUCLEAR WASTE PROGRAM AND SOME EXCITING RESEARCH THAT IS TAKING PLACE ON THE ADVANTAGES OF REPROCESSING AND RECYCLING NUCLEAR WASTE, AS WELL AS WHAT THE DEPARTMENT IS DOING TO IMPLEMENT THE NEW REQUIREMENT IN THE LAW FOR RESEARCH ON SUBSEABED DISPOSAL.

QUESTIONS FOR SECRETARY HERRINGTON FROM SENATOR HECHT

1. AN AMENDMENT I ATTACHED TO THE NUCLEAR WASTE BILL THAT WAS RECENTLY SIGNED INTO LAW SAYS THAT A STATE BEING CONSIDERED FOR A REPOSITORY SHOULD RECEIVE SPECIAL CONSIDERATION FOR ENERGY DEPARTMENT RESEARCH PROJECTS. THIS BRINGS ME TO THE SUBJECT OF THE SUPERCONDUCTING SUPER COLLIDER. NEVADANS WERE VERY DISAPPOINTED TO SEE THAT OUR STATE DID NOT MAKE THE SHORT LIST FOR THIS PROJECT.

I UNDERSTAND THAT NEVADA'S PROPOSAL FOR THE SSC WAS DEFICIENT IN A NUMBER OF WAYS, THAT IT DID NOT MEET SOME OF THE SITING CRITERIA THAT WERE NECESSARY. COULD YOU TELL ME WHAT THESE DEFICIENCIES WERE, WHAT SITING CRITERIA WERE NOT MET? HOW DID THE NEVADA PROPOSAL FOR THE SSC RANK OVERALL, COMPARED TO THE OTHER PROPOSALS?

2. ANOTHER ONE OF MY AMENDMENTS THAT WAS INCLUDED IN THE NUCLEAR WASTE AMENDMENTS WAS A PROVISION TO RESUME ACTIVE U.S. PARTICIPATION IN RESEARCH ON THE POSSIBILITY OF SUBSEABED DISPOSAL OF NUCLEAR WASTE. THE AMENDMENT SET UP A SPECIAL OFFICE IN DOE TO DO THIS WORK. ON JANUARY 10, I AND TEN OTHER SENATORS, INCLUDING SENATORS MCCLURE, DOMENICI, AND EVANS OF THIS COMMITTEE, WROTE YOU

A LETTER ENCOURAGING YOU TO BEGIN FUNDING THIS PROGRAM OUT OF THE NUCLEAR WASTE FUND.

TWO OF MY NUCLEAR WASTE AMENDMENTS THAT DID NOT MAKE IT THROUGH THE CONFERENCE COMMITTEE DEALT WITH THE FEASIBILITY OF REPROCESSING. UNDER THE CURRENT LAW, THERE IS NO SECOND REPOSITORY PROGRAM. IF THE YUCCA MOUNTAIN SITE TURNS OUT TO BE NO GOOD, THEN THERE IS NO REPOSITORY PROGRAM AT ALL, THERE IS NO REPROCESSING, THERE IS NO MRS PROGRAM, AND THAT MEANS THAT THE NUCLEAR REGULATORY COMMISSION IS LIKELY TO SAY THAT THERE IS NO CONFIDENCE IN A SOLUTION TO THE NUCLEAR WASTE ISSUE. IF THE NRC SAYS THAT, THEN LAWS ON THE BOOKS IN VARIOUS STATES ARE GOING TO FORCE NUCLEAR POWER PLANTS TO START CLOSING DOWN, AT TERRIBLE ECONOMIC COST TO OUR COUNTRY.

THERE IS GOING TO BE A LOT OF PRESSURE ON THE NRC TO LICENSE THE YUCCA MOUNTAIN SITE, WHETHER IT'S A GOOD SITE OR A BAD SITE. SINCE WE HAVE IN EFFECT BET EVERYTHING ON ONE THROW OF THE DICE AT YUCCA MOUNTAIN, I THINK IT MAKES SENSE TO SPEND JUST A SMALL AMOUNT OF MONEY TO HEDGE OUR BET A LITTLE, IN THE FORM OF RESEARCH ON THE SUBSEABED DISPOSAL OPTION. I THINK OF THIS RESEARCH AS SOME INSURANCE FOR THE PROGRAM. AT LEAST IF WE MAKE STEADY PROGRESS ON SUBSEABED RESEARCH, THERE WILL BE SOMETHING OUT THERE TO BAIL US OUT IF YUCCA MOUNTAIN'S MANY PROBLEMS TURN OUT TO

DISQUALIFY IT FOR A REPOSITORY. IF WE ARE DOING SOMETHING ON SUBSEABED, THEN THERE WILL ALSO BE LESS PRESSURE ON THE NRC TO LICENSE THE YUCCA MOUNTAIN SITE, REGARDLESS OF WHETHER OR NOT ITS A SAFE PLACE FOR A REPOSITORY.

HAVE YOU APPOINTED A DIRECTOR OF THE OFFICE OF SUBSEABED DISPOSAL RESEARCH, AS THE NEW LAW TOLD YOU TO, AND WHEN WILL YOU MAKE FUNDS AVAILABLE TO GET THIS WORK UNDERWAY, AS SENATOR MCCLURE, SENATOR DOMENICI, AND SENATOR EVANS AND I HAVE SUGGESTED?

3. I UNDERSTAND THE WESTINGHOUSE HAS DONE SOME PRELIMINARY RESEARCH THAT SUGGESTS THAT MOST HIGH LEVEL NUCLEAR WASTE COULD BE DESTROYED BY TRANSMUTATION IN SLIGHTLY MODIFIED CONVENTIONAL PRESSURIZED WATER REACTORS. ARE YOU AWARE OF THIS, AND DOES THE DEPARTMENT INTEND TO FUND RESEARCH IN THIS AREA?

4. THE JAPANESE ARE BEGINNING RESEARCH THAT THEY HOPE WILL LEAD TO A WAY TO DESTROY TRANSURANIC WASTE IN LIGHT WATER REACTORS. ARE YOU AWARE OF THIS RESEARCH, AND ARE WE DOING ANY SIMILAR WORK IN THIS COUNTRY?

5. DO YOU AGREE WITH ME THAT IT WOULD BE A MISTAKE FOR THE UNITED STATES TO LET OTHER COUNTRIES GET FAR AHEAD OF US IN TERMS OF DEVELOPING AND APPLYING TECHNOLOGY TO MORE EFFICIENTLY AND MORE

SAFELY REPROCESS SPENT NUCLEAR FUEL, AND DESTROY THE LEFT OVER WASTE?

WHAT IS THE U.S. DOING TO KEEP FROM FALLING BEHIND OTHER COUNTRIES IN THIS AREA?

Senator HECHT. I apologize for the interruption, but I have to vote and go to a Banking markup. Thank you.

Secretary HERRINGTON. The budget request for weapons production is $2.3 billion. That is less than 2 percent over Fiscal Year 1988.

The program is designed to deliver six different types of nuclear weapons, and includes some upgrades for an aging weapon production complex. The materials production budget of $2 billion provides for the operation of the three production reactors at the Savannah River facility, but it does not support the continued operation of the NReactor at Hanford.

The Department recently decided not to restart the NReactor, but to maintain it in a cold standby. However, the planned safety upgrades will be completed so that it could be restarted in the future if the need arises.

In Fiscal Year 1989, the Department will begin operation of the Waste Isolation Pilot Plant in New Mexico. And in Fiscal Year 1990, operation of the Defense Waste Processing Facility at Savannah River Plant in South Carolina will begin.

Our commitment to environmental protection and to worker and public health and safety at the Department's facilities is stronger than ever. The oversight functions of the Office of the Assistant Secretary for Environmental Safety and Health that was first established in 1985 will continue to grow.

We are responding to a number of internal and external studies, including the NAS–NAE study of production reactor complex facilities. In Fiscal Year 1989, spending on environmental compliance and safety upgrades for all elements of the Department totals $1.5 billion.

The budget request for the Nuclear Waste Fund fully supports the program as redirected late last year by amendments to the Nuclear Waste Policy Act. Yucca Mountain, Nevada, was designated for detailed characterization as a potential first repository.

Most work at the Texas and Washington sites will cease in Fiscal Year 1988. The second repository program was terminated by these amendments.

A major legislative initiative is the sale of the Naval Petroleum Reserves One and Three in California and Wyoming. The proceeds would be applied to doubling the fill rate at the Strategic Petroleum Reserve and creating a dedicated defense petroleum inventory of 10 million barrels.

We are assuming a sales price of $3.5 billion, with $3.2 billion received in 1989, and $.3 billion 1990. Running oil fields is a business, not a governmental activity, in our estimation.

Our national security will improve if this plan is agreed to. The defense needs can be met much more quickly from the defense petroleum inventory than they can be from the oil wells in the Naval Petroleum Reserves.

If the NPRs are sold as planned, we will fill the Strategic Petroleum Reserve at 100,000 barrels a day which is twice the planned Fiscal Year 1988 rate. Assuming the sale, we would have approximately 588 million barrels of oil in storage at the end of 1989. The SPR now contains 540 million barrels.

Our request for conservation grants is $8.6 million to permit continued monitoring of funds that have been made available to the States in the past years. Further direct appropriations are no longer necessary except for this monitoring function.

States have received $3.5 billion in the past three years in overcharge settlements. Future overcharge recoveries are estimated to be $2.1 billion, a substantial portion of which will be returned to the States.

Mr. Chairman, that completes my summary and a budget overview. I would be pleased to answer any questions of you or the Committee at this time.

[The prepared statement of Secretary Herrington follows:]

STATEMENT OF JOHN S. HERRINGTON
SECRETARY OF ENERGY
FY 1989 BUDGET

Mr. Chairman and members of the committee, I appreciate the opportunity to present the FY 1989 budget for the Department of Energy.

The Department of Energy is a multifaceted organization with major responsibilities for enhancing the Nation's energy strength, ensuring national security, and maintaining our scientific and technological leadership. It is especially challenging to perform these missions successfully in today's climate of fiscal constraint. The FY 1989 budget for the Department of Energy accomplishes the very difficult task of meeting the Department's priority needs while conforming to the deficit reduction mandate embodied in the Gramm-Rudman-Hollings deficit reduction legislation and confirmed by the bipartisan budget agreement late last year.

Before discussing the composition of the budget itself I would like to describe briefly the Nation's current energy posture and the Department's policy and budget themes.

CURRENT ENERGY SITUATION

The United States enjoys a much more secure energy environment than was the case years ago when first OPEC and then the Iranian revolution convulsed world energy markets and exposed serious shortcomings in our Nation's energy policies and practices.

Significant gains have been made since this Administration took office seven years ago. Energy costs are lower and a measure of stability in energy markets has emerged. We are using energy from a greater variety of sources than ever before. We have eliminated counterproductive Government controls on domestic oil markets which contributed to past shortages and gasoline lines. Our dependence on energy supplies from the troubled Persian Gulf is down, and our insurance policy against supply disruptions, the Strategic Petroleum Reserve, contains more than 540 million barrels of oil, an inventory more than 400 million barrels higher than existed when this Administration assumed office. Energy efficiency improvements and widespread acceptance of energy conservation practices allow us to use about the same amount of energy to run an economy one-third larger.

We can be justifiably proud of these accomplishments. But we cannot rest on our laurels, especially in view of increasing oil imports which account for one-fourth of our trade deficit.

ENERGY POLICY GOALS

Clearly much has been done, but much remains to be done to consolidate the gains of the past seven years. To increase our energy security as well as our economic security we must strengthen the Nation's oil and gas industry. This is best done by decontrolling natural gas prices, opening up the Arctic

National Wildlife Refuge, and other market based reforms, rather than by imposing artificial government-created incentives. We must continue progress in energy conservation and renewable energy technology whenever this is cost-effective. And we must increase the contributions of nuclear, coal, and natural gas to energy supply, by improving the economic competitiveness of nuclear power, by demonstrating the ability to burn coal cleanly, and by deregulating natural gas.

Other goals for the Department relate to our science and defense missions. Investment in basic science research is an investment in the future. The Department's commitment to the Superconducting Super Collider and to advance research and development on superconductivity are two examples of the priority given by the Administration to expanding our knowledge base, maintaining world leadership in high energy physics, and improving our economic competitiveness through support of advanced research and new technology.

The Department's defense activities are vital to national security. In addition to meeting the requirements of the Department of Defense for nuclear weapons and materials, the Department is committed to ensuring that our nuclear weapons complex is safe and environmentally responsible. I am pleased to advise that in FY 1989 and FY 1990, respectively, the Department intends to begin operating two major defense waste facilities: the Waste Isolation Pilot Plant in New Mexico and the Defense Waste Processing Facility at the Savannah River facility in South Carolina.

Meeting these important goals requires dedication on the part of the Department's employees and contractor personnel, but it also requires legislative action to bring about certain changes which are necessary if these objectives are to be accomplished. Several of these legislative proposals are budget-related and are described below. Others have no direct relationship to appropriations but are crucial nevertheless to fulfilling the Administration's energy goals. I include in this category repeal of the Windfall Profits Tax; complete natural gas decontrol; oil pipeline deregulation; reauthorization of the Price-Anderson Act; oil exploration authority in the Arctic National Wildlife Refuge; adoption, by FERC, of market-based reforms in the electricity industry; and favorable consideration of the U.S.--Canada Free Trade Agreement and the U.S.--Japan agreement for nuclear cooperation. I want to stress the importance of these reforms: repeal of the Windfall Profits Tax, for example. This tax imposes a needless paperwork burden on the industry and it discourages new investment in domestic oil production. Approval of these proposals, together with the legislation which directly supports the budget request, will go far toward establishing this nation's scientific preeminence and energy strength. The recent action by the Senate Energy and Natural Resources Committee recommending the opening of the Arctic National Wildlife Refuge to oil exploration is an important step toward achieving this legislative agenda.

BUDGET THEMES AND INITIATIVES

This budget achieves the Nation's and the Department's objectives by continuing to strive to direct Federal funding only to those activities that are clearly the responsibility of the Federal government; meeting critical defense requirements for nuclear weapons and materials; strengthening partnerships between national laboratories, universities, and industry; encouraging cooperative research and development ventures with industry; divestiture of certain Federal assets where the justification for Federal ownership is limited; a strong commitment to basic research; enhanced funding for worker and public health and safety and environmental protection and restoration at the Department's facilities; strong support for the Clean Coal Program; and a continued commitment to safeguards and security at the Department's facilities.

Major initiatives in FY 1989 include the first year of substantial funding for the Superconducting Super Collider, a major basic science project which will ensure world leadership for the United States in high energy physics. Another major initiative will improve our protection against possible oil supply disruptions by selling Naval Petroleum Reserves 1 and 3 and applying the proceeds to double the fill rate at the Strategic Petroleum Reserve and to establish a dedicated Defense Petroleum Inventory. The budget also supports continuation of recent progress in superconducting materials as well as the translation of those material advances to practical technologies through applied research. We believe these new high temperature superconducting materials could make significant future energy efficiency gains and have novel applications not yet clearly envisioned.

Finally, to strengthen its oversight of nuclear facilities and operations, the Department is proposing significantly higher funding for safety improvements and environmental restoration and oversight activities in response to a number of internal and external studies of the Department's reactor complex, including the recently released National Academy of Sciences/National Academy of Engineering study of the safety of the Department's production reactors.

With this introduction, let me turn now to the FY 1989 budget request.

FY 1989 BUDGET SUMMARY

The FY 1989 budget request for the Department of Energy is $16.1 billion, an increase of about $2 billion over FY 1988. Although the request is 13.7 percent above the FY 1988 level, the level of actual program activity would increase only 11.8 percent because of substantially higher levels of prior year funds available in FY 1988. The increases are to be found primarily in the Strategic Petroleum Reserve, Basic Science Research programs, Uranium Enrichment, the Nuclear Waste program, Defense activities, and the Clean Coal Technology program.

At this point I would like to discuss the budgets for selected program areas.

BASIC SCIENCE RESEARCH

A long-standing goal of this Administration has been to maintain the nation's scientific and technological preeminence. Over the past several years the Department's basic science budgets have been among its fastest growing accounts. The Department proposes to continue this growth in FY 1989.

This increase is due principally to the inclusion of the first year of major construction funding for the Superconducting Super Collider (SSC). It should be noted that the SSC is not being funded at the expense of existing research projects, but is in addition to the amounts considered necessary for these other worthy activities.

For FY 1989 the Department is proposing $363 million for construction and research and development of the SSC. The enhanced funding for research and development in the SSC program is required to finalize design of the superconducting dipole magnets and various other related technical systems and to proceed with the detector development program.

A major effort in FY 1988 involves site selection activities. Final site selection is scheduled for FY 1989, and initial construction activities for the SSC will begin that year. The requested funding will cover such construction activities as the following: detailed design of technical systems and conventional facilities; long-lead items for power stations and utilities; and the injector and collider components' long-lead items. A substantial portion of the total project cost will be solicited from non-federal sources such as foreign investors, based on the anticipated benefit of the project to the international scientific community. With continued funding as planned, the project can be completed in 1996.

I should note that initial contacts were made in January with OECD countries about their interest in and prospective contribution to the SSC. The response to date has been very positive and foreign scientists are already contributing to the design phase. However, the clear position of all these countries was that a demonstrable U.S. commitment to the project, reflected by bipartisan Congressional support for our FY 1989 budget request, was a prerequisite to the substantial contributions on their part that we anticipate in later fiscal years.

Another major project in this budget, which shows promise for making significant contributions to the Nation's scientific and technical stature, is the initiation of construction on the 6-7 GeV Synchrotron Light Source at Argonne National Laboratory. This project will aid the U.S. in maintaining its competitive position in areas such as semiconductors, supercomputers, biology, chemistry and materials. Synchrotron radiation emitted by circulating electron or positron beams has emerged as a very powerful and versatile source of vacuum ultraviolet light and x-rays, and is very effective for probing the structure of matter and for studying various physical processes.

Beginning in FY 1989 the SSC, the 6-7 GeV Synchrotron, and all other major user facilities presently supported in the High Energy Physics, Nuclear Physics, and Basic Energy Sciences program budgets will be budgeted for in a new account entitled Basic Research User Facilities. This new account will ensure that the SSC and other basic research user facilities will continue to receive the appropriate emphasis in the funding process. With enhanced visibility we can be better assured that the facilities receive the resources required to keep them operating at effective and efficient levels.

MAGNETIC FUSION

The budget for Magnetic Fusion increases from $335 million to $360 million in FY 1989.

The fusion program supported by the FY 1989 budget builds on past progress in the domestic fusion program and supports the world fusion program. The FY 1989 program provides research and development and construction funding for the Compact Ignition Tokamak, a device designed to prove that a plasma can be ignited and burn without continuous external heating. The program for FY 1989 has been restructured so that it will not demand real increases in the future, even with the programmatic addition of the CIT. Another activity to be supported in this area is the design and research and development for an International Thermonuclear Experimental Reactor (ITER), an international prototype fusion reactor.

BIOLOGICAL AND ENVIRONMENTAL RESEARCH

Three recent initiatives in the Biological and Environmental Research program are accorded increased funding in FY 1989. The three are the human genome project, radon research, and research into the effects of increased atmospheric carbon dioxide.

ENVIRONMENT, SAFETY AND HEALTH

The proposed budget for the programs consolidated under the direction of the Assistant Secretary for Environment, Safety and Health increases substantially from $68 million to $110 million. The Environmental Survey, a comprehensive identification of environmental problems at DOE sites, will be completed in FY 1989.

During FY 1989, the program will move to implement vigorously throughout the Department the recommendations of the National Academy of Sciences/National Academy of Engineering review of nuclear safety at the Department's defense facilities. Major initiatives will be pursued to improve further the level of safety assurance afforded at nuclear and non-nuclear facilities, including both internal and external oversight measures. External oversight has been improved with the establishment of the independent expert Advisory Committee on Nuclear Facility Safety. An intensified, independent, internal safety appraisal and safety analysis program will also be pursued. Technical information exchange with the commercial sector is being enhanced through an agreement with the Institute for Nuclear Power Operations.

CLEAN COAL TECHNOLOGY

Last year, the President announced the Innovative Control Technology Initiative, a 5-year, $5 billion program, with $2.5 billion in Federal funds to be provided over the period of FY 1988-92. This initiative will fund demonstrations compatible with the recommendations of the Joint Report of the U.S. and Canadian Special Envoys on Acid Rain and the Presidential Task Force on Regulatory Relief to stimulate development and deployment of new means to reduce air pollution emissions. This initiative was to incorporate and build on the $150 million advance appropriation already in place for FY 1988. This, in addition to funding in prior years, has led to the selection of eleven cost-shared projects. In recent appropriations action, Congress provided $50 million in FY 1988 and $525 million in FY 1989 to permit a second solicitation, which was issued on February 22 and which focuses on cost-shared projects demonstrating near-commercial technologies which are capable of retrofitting or repowering existing coal using facilities to reduce harmful emissions in a cost-effective manner.

While Congress has already appropriated FY 1989 funding in advance, the Department is requesting that Congress appropriate the remaining $1.8 billion for the period FY 1990-92 so that additional solicitations may be planned and the full $2.5 billion multi-year program can be accomplished.

FOSSIL, CONSERVATION, AND RENEWABLE ENERGY RESEARCH AND DEVELOPMENT

The FY 1989 budget requests for Fossil Energy, Conservation Research and Development, and Solar and Other Renewables are consistent with the Department's FY 1988 request but well below the levels appropriated by Congress. We believe the proposed levels are appropriate and concentrate Federal funds on the highest priority research and development needs. Many of the specific activities being reduced or eliminated are special-interest projects, added last year in the Continuing Resolution. They include company-specific subsidies for commercial development, low-priority demonstration activities that preserve jobs or visibility for local interests, and funding for selected university buildings that have not passed merit review and are unnecessary for the conduct of current programs. The budgets in all three areas provide for cost-shared government/industry cooperative ventures.

Major elements of the Fossil Energy research program will focus on advanced research on acid rain-related technologies, with substantial activities in control technology, coal preparation, and combustion systems. The petroleum program will concentrate research and technology development on enhanced recovery of light and heavy oils.

Within Conservation Research and Development the Transportation program is the largest element. It will focus on vehicle energy efficiency improvements and on crosscutting research in advanced high-temperature materials, with emphasis on advanced ceramics.

The Renewable Energy program includes research and development on a broad cross section of technologies showing promise for diversifying the Nation's long-term domestic electric fuels, and on thermal energy supplies. Major subprograms include moderate and high temperature solar hear, photovoltaics, wind, biofuels, and geothermal technologies. I am pleased that the budget includes over $12 million in support of high-temperature superconductor applications.

NUCLEAR ENERGY

Nuclear Energy research and development programs continue at approximately the same level as FY 1988. The program mix continues the emphasis begun in FY 1988 on providing special nuclear power sources for a variety of civilian and military missions. Advanced reactor research and development efforts are focused on the liquid-metal-cooled reactor, the high-temperature gas-cooled reactor, and supporting international collaborative arrangements. For the cleanup of uranium mill tailing sites and the West Valley Demonstration Project the Administration will propose legislation to clarify and limit Federal responsibility for future project costs.

DEFENSE ACTIVITIES

The Department of Energy has major responsibilities for national defense, including producing nuclear weapons and materials to meet Department of Defense requirements. Funding for all aspects of our defense activities, including the Naval Reactors program, totals $8.1 billion in FY 1989, up from $7.7 billion in FY 1988. The increase is slightly above the estimated rate of inflation. The FY 1989 budget includes $1.9 billion for Weapons Research, Development, and Testing; $2.3 billion for weapons production and $2.0 billion for production of special nuclear material; $0.9 billion for defense waste programs; $0.6 billion for Naval Reactor Development; and $0.4 billion for other defense activities, such as Verification and Control Technology, Safeguards and Security, and Security Investigations.

Weapons Research, Development, and Testing shows no funding growth over FY 1988. Funding in support of nuclear directed energy weapons for the Strategic Defense Initiative is proposed at $285 million, as compared with $279 million in FY 1988. Weapons Production is also funded at approximately the same level as FY 1988. Materials Production increases from $1.8 billion to $2.0 billion, due primarily to higher funding for safety upgrades at the Department's materials production reactors.

The budget request provides for the operation of three production reactors at the Savannah River facility in South Carolina, but does not support funding the continued operation of the N-Reactor at Hanford, Washington, reflecting a reduction in Department of Defense material requirements. Increased funding is provided for safety upgrades of the nuclear facilities, consistent with recommendations from the National Academy of Sciences and internal oversight organizations. The budget also supports the deployment of Special Isotope Separation technology by 1995 and the completion of a New Production Reactor in the 1998-99 time frame. A review process is being set up to evaluate candidate technologies and sites for this reactor.

Defense Waste and Environmental Restoration funding increases from $895 million to $937 million. The budget continues construction of the Defense Waste Processing Facility, which is scheduled for completion and operation late in FY 1990 at the Savannah River Plant in South Carolina. It also supports the Waste Isolation Pilot Plant in New Mexico, which becomes operational in FY 1989. The budget continues construction of the Waste Vitrification facility at the Hanford, Washington site. Increased funding for environmental restoration is provided for cleanup of inactive hazardous or radioactive waste sites and facilities at all DOE Defense Programs installations.

NUCLEAR WASTE FUND

The Nuclear Waste Policy Act Amendments Act of 1987 (Amendments Act) ordered a major redirection of the nuclear waste disposal program. The FY 1989 budget request of $449 million, up from $360 million in FY 1988, fully supports the redirected program. The FY 1989 request also includes the necessary funds for support and coordination with the MRS Review Commission, the Nuclear Waste Technical Review Board and the Nuclear Waste Negotiator.

Yucca Mountain, Nevada, was designated by Congress for detailed characterization to determine site suitability for the first geologic repository. No funds are being requested for the second repository program which was terminated with the passage of the Amendments Act. The closeout of these activities, as well as first repository activities in Texas and Washington, will be completed during FY 1988. The Amendments Act authorized a Monitored Retrievable Storage (MRS) facility as part of the overall waste management system and placed specific conditions on the timing of its siting, construction and operation. Following submission of the MRS Review Commission Report in June 1989, a DOE survey and evaluation of potential MRS sites is also authorized and preparation for definitive design and licensing will begin. FY 1989 funding will continue program and regulatory compliance and financial assistance activities.

URANIUM ENRICHMENT

The Department of Energy is charged with meeting commercial and government requirements for enriched uranium economically and reliably. It is a goal of the Administration to turn the uranium enrichment enterprise over to private sector management, and as part of the FY 1989 budget the Department is submitting legislation repealing the prohibition on studying or proposing privatization of the uranium enrichment enterprise. This prohibition does not allow for the investigation of legitimate ideas, nor does it permit the gathering of necessary information to analyze options that may be in the National interest. Further, the prohibition prevents the Executive Branch from carrying out its Constitutional duties to make proposals for the consideration of Congress. While uranium enrichment remains a government program, the Department seeks to keep it strong and healthy to ensure its long-term vitality and create the opportunity for transition to private ownership.

The FY 1989 program is designed to reduce the cost of providing enrichment services. The program will continue to draw down the existing stockpile of enriched uranium, thus reducing the need for purchased power to operate the gaseous diffusion plants to meet customer requirements. Revenues in excess of program costs will accrue to the Treasury.

NAVAL PETROLEUM RESERVES

A major legislative initiative is the Administration's proposal to sell Naval Petroleum Reserves (NPR) 1 and 3 and apply the proceeds from the sale to create a 10 million barrel Defense Petroleum Inventory and to fill the Strategic Petroleum Reserve at a rate of 100,000 barrels a day until 750 million barrels are in storage. These changes would significantly enhance national security in the event of an oil supply disruption.

The budget assumes that the NPRs will be sold at the end of FY 1989, after Congress passes legislation authorizing the sale. Sales proceeds of $3.5 billion are assumed in the budget, with $3.2 billion received in 1989 and $0.3 billion in 1990. The actual sales proceeds will depend on market forces when the NPRs are sold. The FY 1989 budget request supports operation of the NPRs for the full year.

STRATEGIC PETROLEUM RESERVE

Assuming the NPR divestiture proposal is enacted, the total FY 1989 program level for the Strategic Petroleum Reserve (SPR) is $1.2 billion. Of that amount approximately $334 million is requested under current law for continued fill of SPR at a rate of 50,000 barrels per day (BPD), consistent with the fill rate provided for in the FY 1988 Continuing Resolution. The FY 1989 program also includes a request of $175 million for facilities development and management. This will permit continuation of full-scale development of SPR storage capacity and increased distribution capability.

Contingent upon enactment of proposed legislation authorizing sale of the Naval Petroleum Reserves, as noted above, the proceeds from this sale would be used to increase the SPR fill rate to 100,000 barrels per day, and to acquire 10 million barrels of crude oil for a Defense Petroleum Inventory. At the end of FY 1989, based on a fill rate of 100,000 barrels per day, the SPR will contain approximately 588 million barrels of oil.

POWER MARKETING ADMINISTRATIONS

The principal issues concerning the Power Marketing Administrations involve divestiture and, for Bonneville Power, financing the Third A.C. Intertie in the Pacific Northwest. The Department will continue its effort to sell the Alaska Power Administration, and will seek enactment of legislation to study divestiture of the Southeastern Power Administration.

An estimate of the borrowing authority required for Bonneville to finance the Third A.C. Intertie in the Pacific Northwest is presently not included in the FY 1989 budget pending completion of the Bonneville non-Federal participation study. The decision to not include funding at this time is made without prejudice to the study or the ultimate funding recommendation. After the study is completed, a recommendation will be made on the question of Federal and/or non-Federal participation in the project.

CONSERVATION GRANTS

The Conservation Grants program has provided funds to State and local governments to undertake energy conservation measures. The FY 1989 request is limited to program direction funds to provide technical assistance to the States and monitoring of the State's use of petroleum violation funds. The States have available to them very large sums specifically earmarked for conservation and other energy-related activities from the settlement of oil pricing and allocation violations. In the past three years, $3.5 billion has been returned to the States in major settlements. At present, future overcharge recoveries are estimated to be approximately $2.1 billion, a substantial portion of which would be returned to the States. Under these circumstances, continued use of appropriated funds for grants is no longer necessary.

Mr. Chairman, I believe the budget I have summarized meets the Department's responsibilities in its several mission areas in a sensible and realistic manner.

Senator **McClure**. Thank you very much, Mr. Secretary. As you may have heard, while you were testifying the bells rang. There is a roll call vote on the floor of the Senate at the moment.

We are going to have to recess briefly while we attend that roll call. We will resume upon return. The Committee will stand in recess, subject to the call of the Chair.

[Recess.]

The **Chairman**. Pardon our interruption, Secretary Herrington. We had a vote on the floor, as I am sure you are aware. So please proceed.

Secretary **Herrington**. Mr. Chairman, I have concluded my statement, and would ask permission to submit a more detailed statement for inclusion in today's hearing record.

The **Chairman**. Without objection. Mr. Secretary, as Chandler van Orman stated in a January 1988 letter to me that there are 199 cases pending and an additional six more, a maximum of six more for ERA to file, yet your budget request contends that 275 cases remain unresolved.

Can you resolve those conflicting numbers?

Secretary **Herrington**. I cannot, Mr. Chairman. But I would be happy to submit the answer for the record.

[The information follows:]

The letter in question stated that the Economic Regulatory Administration (ERA) has responsibility for litigation of 199 cases. To this number must be added cases identified as bankruptcy actions in judicial litigation. Some non-bankruptcy judicial litigation cases were also included in the 199 number. As of November 30, 1987, there was a total of 282 cases. As of February 29, 1988, ERA had a total of 278 cases which tracks closely with the estimate of 275 cases stated in ERA's budget request.

Other than the cases remaining in a pre-litigation status, ERA will not initiate any new enforcement actions. ERA will continue to be named as a respondent in legal actions commenced by others and, in addition, will be assigned primary litigation responsibility by the Department of Justice in other cases. These cases are carried in ERA's inventory.

The Deputy Administrator, Chandler L. van Orman, is in the process of systematically reviewing every case in which the ERA is involved. The results of his efforts may result in a slight change in the total number of ERA cases.

The **Chairman**. All right. Your request asks for increases for post-litigation and management for the oil overcharge programs, yet you only show a small decrease from 39 to 35 compliance auditors and from 66 to 65 attorneys.

How would you justify the dollar increase and the small personnel decrease, especially after settling with Texaco one of ERA's largest cases?

Secretary **Herrington**. Mr. Chairman, I would like to put a more detailed answer in the record. But I do believe that the basic program is coming down.

[The information follows:]

The Compliance program's request for FY 1989 indicates an overall reduction of $500,000 and 10 FTE's from the prior year. However, the management and post-litigation activities within the Compliance program show a $50,000 gain attributable to increased salary and overhead costs due to inflation. The FTE levels for these two activities remain unchanged. While administrative and judicial caseloads will continue to decline, requiring fewer attorneys, auditors and litigation support personnel, the non-litigation responsibilities will remain fairly stable over the next few years. Once consent orders have been formally entered into or final administrative or judicial orders issued, ERA will still be responsible for monitoring all payments and for collection activities on delinquent accounts. In addition, ERA will remain responsible for referring firms with delinquent payment accounts to the Department of Justice for collection, verifying compliance with the provisions of consent orders and administrative and judicial orders, petitioning the Office of Hearings and Appeals to commence Subpart V proceedings, and notifying firms of their recordkeeping requirements.

The CHAIRMAN. All right. Why, as a matter of policy, cannot the enforcement of oil overcharges be transferred to the general counsel's office. Has that been given consideration? Or is that appropriate?

Secretary HERRINGTON. It has been given consideration, and I think we will give it added consideration this year.

The Texaco settlement, of course, was an important settlement, one of our very large remaining cases. I think twelve separate cases were involved, and the settlement as you know recently happened.

So I think after that settlement, which will now get a consent order signed and be published in the Federal Register, it may be appropriate that we take an action like that.

The CHAIRMAN. You might give us your views on that after you have had time to consider that and tell us the pros and cons of that.

Secretary HERRINGTON. I do believe we need a legislative change for that particular action.

The CHAIRMAN. Well, if you have a recommendation to make, we would be very pleased to consider that.

Secretary HERRINGTON. Thank you.

The CHAIRMAN. Mr. Secretary, in your testimony, as well as in the highlights document accompanying the budget, you state that the Department seeks to keep the enrichment enterprise, the uranium enrichment enterprise "strong and healthy to ensure its long-term viability" and also "to create the opportunity for transition to private ownership."

Do you support, can you support the formation of a government corporation for the enrichment enterprise to play that role?

Secretary HERRINGTON. We strongly support that, and I think at the very minimum, while we debate these other issues, that needs to move forward.

The CHAIRMAN. You have seen our legislation reported out of this Committee?

Secretary HERRINGTON. I have.

The CHAIRMAN. And you support that?

Secretary HERRINGTON. Mr. Chairman, I think we are prepared to support a great deal of it, and to come up and discuss with the Committee any points of disagreement which I think are small or minor at this point.

When I appeared before you last year, we had three major issues in this program, the miner's suit, the demand payments to TVA, and the repayment obligation to the U.S. Treasury, that were bothering us.

We have made substantial progress on two of those, and I think the third, the miner's suit, is in the Supreme Court at this time. So I think we are working out some of these particular areas.

The CHAIRMAN. I am pleased to hear that. On the Superconducting Super Collider, I am sure you are familiar with our procedures in the Appropriations Committee, in light of the budget act, which is that we have 302(b) allocations, we call them, for each of our 13 subcommittees.

And as you know we had an increase of 2 percent—I believe that is the right figure—2 percent nominal, and all of the domestic discretionary accounts, of which Energy and Water Subcommittee has a large part of that.

Now, with respect to your budget on SCC, it has been stated that that was supposed to be new money, so that in Energy and Water we do not have to raid other, particularly other scientific research activities in order to fund the SCC.

Is that your understanding? And will other scientific endeavors feel that they are fully funded?

Secretary HERRINGTON. Yes, sir. I believe that is our position.

The CHAIRMAN. And where do we get the money for SCC? I mean SSC.

Secretary HERRINGTON. What we are not proposing is cutting back other research programs in order to fund the SSC.

The CHAIRMAN. I think what we are going to find is that the administration wish list on things like Appalachian Regional Commission is going to be used as the source for funding that, that is, abolishing the Appalachian Regional Commission, and as far as I am concerned, that is okay, we can do that since Louisiana does not happen to lie within the Appalachian region.

But you might be amazed to find out that there are Senators who would oppose that, some strategically placed, and that battle has been fought before and lost by those who wished to abolish the Appalachian Regional Commission.

So frankly, while I think the activities of the Superconducting Super Collider would contribute greatly to science, would enhance America's leadership in this are and would help solve some continuing riddles about the character and make-up of the atom. My guess is that we are going to have to wait beyond this year to get the answers to those riddles because the biggest riddle of all is where is the money, and I think the money is going to be in the Appalachian Regional Commission and similar activities of government unless you can figure out some new source.

Secretary HERRINGTON. I have a number of ideas, Mr. Chairman. Not all of them are compatible, I am sure, with this committee or some of the other committees. I think there are some basic differences on spending priorities up and down in the U.S. Government between this Administration and the Congress on some of the projects that are going through.

The CHAIRMAN. There are even some differences between me and my colleagues. But we have to deal in the real world. So I just do not know where that money is going to come from for SSC, Superconducting Super Collider.

Secretary HERRINGTON. I have had great trouble pronouncing that, so we have now shortened that to Super Collider, and we would invite the committee to do the same. It is really a mouthful.

The CHAIRMAN. That is much more better. [Laughter.]

Mr. Secretary, Senator McClure and I are very anxious to pursue a new reactor, not just a new production reactor, but new technology which would be more inherently safe and would have more appearance of safety. Light water reactor is indeed a proven machine for producing energy. It is clean, you can say a lot of other good things about it, but one place it does not pass muster is in public opinion and in the economics produced by the regulation required to accommodate the public opinion. In other words, it takes us 15 years to build one here in this country, and that is not economically feasible, given the cost of money, and it is probably not going to be feasible to reduce that 15 years very much, given public opinion. And we will not be able to do it like the Japanese do where the scientists run the program. We still insist that lawyers run the program here, and that means more time.

So I think what we have got to do is get a new reactor, perhaps a high temperature gas reactor or other kind of reactor, maybe using graphite, which would be more inherently safe. And for that purpose, we are giving preliminary thought to drawing some legislation which would require the Department of Energy to put out an RFP for some kind of new reactor, and then go through a discipline where DOE would make recommendations for a new reactor.

Do you have any reaction to that? Can you give us any help in formulating our initial cut at that legislation?

Secretary HERRINGTON. One of the issues in the acquisition strategy for the New Production Reactor that is going on today and that we have described to the committee is the evaluation of four separate reactor technologies; HTGR, liquid metal, light water, and heavy water reactors. I do not know what the results of that particular acquisition strategy will be, but we will know by this summer what the recommendations are.

If we could combine the New Production Reactor with a new technology, you may get the benefit of both. If you are speaking about a separate, distinct reactor development program, that would be expensive. We have scaled back our funding for nuclear energy research and development approximately 77 percent from 1980. The program is down because of budgetary constraints.

I am certainly not against the development of new reactor technologies. I would think a new reactor would be extremely beneficial to the country.

I would like to ask Assistant Secretary Garrish, the Assistant Secretary for Nuclear Energy if he cares to comment on that.

Mr. GARRISH. Mr. Chairman, all advanced reactor concepts have substantial merit and need to be investigated. What we have done this year in our budget is increase the requested amount of funding for the high temperature gas reactor, for instance, from previous budget requests. And we need to do a couple of things. We believe that we need to continue our developmental design programs, and we need to continue discussing those designs with the NRC.

We feel that, as a first step—before we get into a very expensive demonstration project—we need to continue our design work and begin to move forward with these concepts.

At this stage, there does not seem to be enough utility industry interest in some of these concepts to merit a large demonstration project. However, I think the point that you make is correct, that there are some inherent advantages to these new reactor designs and they need to be investigated. We are trying to propose a program that is consistent with our need to restrain the overall Federal budget and, at the same time, move forward with some of these designs.

The CHAIRMAN. Well, I do not think we can afford to wait on the utilities. Utilities have, first of all, a huge investment in light water reactors. Some of the vendors, of course, obviously have a huge investment in light water reactors, and we do not mean to suggest for one minute that this is a move against light water reactors, but somebody would have to be inordinately naive to believe that there are going to be any new orders of light water reactors, given the public attitude toward those, and given the financial record of light water reactors.

So it seems to me that now is the time for us as a nation and for this committee to move forward on trying to find a new technology.

Now, I think there is a new technology out there somewhere that would have economic advantages but would be more inherently safe, more forgiving technology, and at this point I do not know which way we should go. We talk about it in general terms, and obviously the new production reactor is a great opportunity. We do not want that, however, as important as that is, and it is something we have got to do anyway—we have got to do I think two production reactors, and I think it is a good opportunity to have one of those as an HTGR, but we do not want the tail to wag the dog, even though it is a very big tail.

We probably have light water reactors now because of Admiral Rickover. That may or may not have been a good decision for the country and a good result, but we do not want that decision as to the new production reactor to be made accidentally a la Admiral Rickover unless it is the right decision. But I think we need to move forward with dispatch on that, at least in our preliminary phases.

So Secretary Garrish, I wish you would give us a letter at least detailing your thoughts on it. You do not have to give us a final conclusion because I suspect you will probably be like us, be undecided as you go through it, but your thoughts on it would be very helpful to us, and we will try to begin to fashion that legislation, and I would hope we can have some kind of legislation put in to serve as a model for hearings to begin this year.

I doubt if we would report legislation this year, although that is possible, but at least begin the hearing process and send the signal to the utility industry and to the potential vendors that we think we ought to begin to design, to have on the shelf new reactors, maybe modular reactors, smaller, which you can build in the factory and ship out, all kinds of possibilities. But we need to think about that right away.

Secretary HERRINGTON. Mr. Chairman, I think it would be beneficial at the same time—sometimes we decide to go into a new project such as this and consider the job done—this has to go hand in hand with things like Price-Anderson, reform of the NRC, and addressing waste transportation issues. I do not think all the reactors in the world are going to bring this program back until we address with forthrightness things like Price-Anderson.

The CHAIRMAN. While we are on the subject of Price-Anderson—and this will be my last question—we are hoping to bring that legislation up soon. I have been pushing for the last two or three months along with Senator McClure and others to get that matter considered.

It has been suggested that there is no problem with the contractors, the government contractors, that there are long lines of people waiting to pick up the gauntlet or pick up the challenge if GE or University of California or Westinghouse or the other government contractors, existing contractors, should drop their contracts.

Is it a problem, is there a national defense or a national interest problem with government contractors, and if so, what are the dimensions of that problem?

Mr. GARRISH. Mr. Chairman, the point that you make is an important point on Price-Anderson. We have had some contractors who have signed up with indemnity from liability under the authority granted by Public Law 85-804. However, they have done that reluctantly, and they have done that with the assumption that the Congress would pass Price-Anderson protection.

The CHAIRMAN. Now, Public Law 85–804 is where the government holds them harmless?

Mr. GARRISH. That is correct. However, there are some problems with Public Law 85–804 that the contractors have pointed out to us, and they prefer to be indemnified under Price-Anderson's "omnibus" provisions. I should point out that in the Du Pont situation at Savannah River, one reason for their decision not to renew their contract was because of this particular problem. A number of contractors have come to see me and the Secretary that were interested in the possibility of coming in to do that project for us. However, all of them have indicated very strongly that Price-Anderson protection is extremely important for their participation in the program, and I think it is important that we emphasize that point.

The CHAIRMAN. What is the problem with Public Law 85–804?

Mr. GARRISH. It has a subrogation provision in it. In other words, it is like buying an insurance policy for your automobile, except if you are not totally insured, someone can come back and sue you regardless of whether or not the insurance policy pays off.

The CHAIRMAN. So that the government, under Public Law 85–804 would contractually agree to indemnify the contractor, but then after indemnifying them, then the government could go against the contractor for the indemnity already paid?

Mr. GARRISH. That is correct.

[Subsequent to the hearing the Department submitted the following:]

CLARIFICATION FOR THE RECORD

The Government indemnity provided to a contractor under Public Law No. 85-804 excludes Government claims against the contractor if the claims arose due to the willful misconduct or lack of good faith in any of contractor's principal officials.

The CHAIRMAN. And it is not possible for the government to surrender its right to subrogate?

Mr. GARRISH. Under that particular statute, that is correct.

The CHAIRMAN. I see. And it is your position that should Price-Anderson not be renewed, there would be difficulty in, is it difficulty in getting contractors at all or difficulty in getting responsible contractors, or what is the problem?

Mr. GARRISH. In order to attract high quality contractors to do this type of national security work on weapons production, it is essential for us to maintain the very high standards of public safety and public interest, that we get the best contractors possible to do this sort of work.

The problem that we have is that many of the contractors that serve us do so for little or no compensation. We pay them for the time that their employees work on our projects, but many of them have compensation that is either $1 a year—for instance, in the case of Du Pont—or many do it without compensation at all, or for very, very small percentages in terms of the total dollars value of the contract. In order to attract those high quality corporations to do this work we need the kind of protection that Price-Anderson affords for them to make sure that they and the public are fully protected.

The CHAIRMAN. And in the case of Du Pont, there have been a number who have inquired about that, and you say that Price-Anderson is important.

Would they do it without Price-Anderson?

Mr. GARRISH. Many have indicated to me that the reason for their inquiry, of course, was to determine from the Department whether or not we were serious on Price-Anderson, whether or not we could assist in the process of getting Price-Anderson reenacted, and we indicated to them that it would be essential to the Department. They indicated that without Price Anderson, that they would not be willing to go forward and even bid on the contracts.

The CHAIRMAN. Can you name us some of those contractors?

Mr. GARRISH. I would prefer to submit that in writing, if I could.

The CHAIRMAN. All right, I wish you would do that, and right away because we would like to have that before the matter comes up for hearing.

[The information follows:]

CONTINUED CONTRACTOR PARTICIPATION IN DOE NUCLEAR ACTIVITIES

The absence of Price-Anderson coverage in DOE contracts has been cited by the following firms as one reason to withdraw from or decline to participate in DOE-sponsored nuclear activities:

E. I. du Pont de Nemours and Company, Incorporated
General Electric Company

In addition, representatives of the following firms have indicated to DOE officials their continued concern regarding the absence of indemnification from public liability claims under section 170 of the Atomic Energy Act (Price-Anderson provisions):

Mason and Hanger-Silas Mason Company
Associated Universities, Incorporated
University of Chicago
EG&G, Incorporated
GA Technologies, Incorporated
Rockwell International Corporation

The following organizations have also written key members of Congress to express their specific concerns regarding any reauthorization of the Price-Anderson Act:

University of Chicago
General Electric Company
Battelle Memorial Institute
Battelle/Pacific Northwest Division
Sandia National Laboratories
Rockwell International Corporation
GA Technologies, Incorporated
Westinghouse Electric Corporation
E. I. du Pont de Nemours and Company, Incorporated
Martin Marietta Corporation
Bechtel National, Incorporated
American Nuclear Energy Council
Stone and Webster Engineering Corporation

The CHAIRMAN. One more question on Price-Anderson, and I apologize to my colleagues, but this is coming right up, and that has to do with the—there is an amendment that will be offered to increase the liability of contractors in the case of gross negligence to, we do not know what the figure is, but a very substantial figure, I think I am safe in saying in the millions of dollars.

Would that cause any difficulty to the program?

Secretary HERRINGTON. This particular amendment causes us a great deal of trouble, and I think it would be very difficult for us to live with it.

The CHAIRMAN. And why is that?

Secretary HERRINGTON. It opens up the Treasury to an extent that I think is not warranted.

The CHAIRMAN. No, I am not talking about——

Secretary HERRINGTON. You are talking about the Judgment Appropriations amendment?

The CHAIRMAN. I am talking about the amendment which would say in the event of a contractor, under Price-Anderson, but there are two parts of Price-Anderson, two different amendments. One amendment says in the case of a government contractor, if they are guilty of gross negligence, that the government would have the right to come against them for a fine in the amount of multi-millions of dollars. That amount is not yet fixed..

Secretary HERRINGTON. I think the point on that amendment is we have a close working relationship with these companies, and I think that would undermine the relationship that we have with them, especially to a company such as Western Electrtic or Du Pont that is working for one dollar over the life of the contract. Look at the exposure that that opens them up to in the event some employee or some agency in theory, charges them for gross negligence.

I think we are asking too much on that particular amendment.

The CHAIRMAN. All right.

I have some other questions which I will submit in writing, and with apologies to my colleagues for taking so long.

Senator McClure.

Senator MCCLURE. Thank you very much, Mr. Chairman.

First of all, let me commend you on the general thrust of your questions and comments. I find I share much of the same concern and would have asked a number of those questions had you not done so.

And you saved me from making some of the comments that I otherwise would have made, and I guess I will just say amen, amen here and there throughout the transcript.

But I would like to make just a very brief statement and then yield to other Members who can make specific questions, and then I will come back at the end and ask a few other questions, if I may.

If I may take the time for the brief statement because it may describe the concerns that I have and help you understand what some of the Members of the committee are driving at as we look at the general context of the budget, not any specifics.

The Department of Energy is the largest contract agency within the Federal Government with the single exception of the Department of Defense. For Fiscal Year 1989, $16.1 billion are being sought for a variety of activities such as atomic energy defense, energy research and development, the power marketing administrations, and certain business activities, including uranium enrichment. Only $3.7 billion, or 23 percent of the Fiscal Year 1989 budget are intended for what the administration terms as energy research and development.

Last year I expressed my concern for the administration's continuing push to restructure the programs of the Department of Energy to place greater emphasis on national defense programs and basic sciences. While I fully support these programs, the administration once again proposes to fund them at the expense of various energy research and development programs.

Let's look for a moment at what the administration characterizes as energy research and development for which $3.7 billion is being sought, an implied 18 percent increase. But the gross figures are quite misleading, because that figure includes basic science research which in the past has been shown separately. By comparison, only $2 billion, or 54 percent of that figure, is being sought for what is normally characterized as energy research and development, and that is about 12½ percent of the total budget being requested.

I understand the national and international significance of such basic science initiatives as the SSC, and I support its construction. But as I said last year, congressional support for this project is important if it is going to be funded in the present budgetary environment, and once again this year, the administration proposes to partially fund the supercollider at the expense of other ongoing programs such as energy conservation and fossil energy research.

I say that knowing that the administration priorities have differed from those which the Congress has had in the past, and I say that expecting that that indeed is the case again this year. Your expression of priorities is a very legitimate one. I am trying to contrast it with what Congress has done and is likely to do.

If congressional support for the SSC is to be forthcoming, then the project must be justified on its own merits and the funding provided accordingly.

I cannot let this opportunity pass without commenting on three other matters. First, I must express concern about the proposed reduction of the HTGR program. The Congress has clearly identified this program over a period of years as critical to the development of a second generation nuclear power option. Again, I want to separate that for a moment and highlight it separately from the NPR question.

Secondly, I must strongly oppose the administration's proposal to use the DOE uranium enrichment activities as a means to underwrite other departmental activities. The budget proposes repayment to the Treasury of $91 million of so-called excess revenues. The Congress already has spoken on this issue in Public Law 100-202 which restricts the use of uranium enrichment revenues to the offsetting of actual program costs. This proposal reopens the issue of debt repayment that has not been resolved by the Congress.

This overall issue was addressed by this committee in S. 1846 which is currently pending on the Senate calendar. I would also observe that the administration once again relies on privatization of the DOE uranium enrichment activities as a source of offsetting receipts. However, I must note that we have yet to receive a specific proposal from the administration.

The legislation reported by this committee that I mentioned also deals with the restructuring of the Uranium Enrichment Enterprise. I would hope that we can work together to achieve a passage of that bill rather than have us wait until DOE can finally transmit a different proposal.

Finally, there is the matter of the adequacy of our current production reactor capacity following the decision to leave the N-Reactor in a cold, standby status, and I want to emphasize what you stated in your presentation to us. It is a cold, standby status so that we could reverse that if something should happen that would indicate the necessity and the wisdom of doing that.

The department is faced with the difficult but important task of selecting a new reactor and sites for the construction of new production reactors. It is critical that the process that you follow in arriving at that decision is balanced and far-sighted, with input from all interested parties. The final choice of the technology or technologies that will be employed can have tremendous impact on the future of our entire nuclear industry, and indeed, on the security of this nation.

I was particularly pleased to note the answer that you made to Senator Johnston in response to comments and questions that he made in that area. I hope I did not emphasize too much the cold, standby status of the N-Reactor, but I do want people to understand openly the critical nature of production facilities that we have, and I think you would agree with us that indeed the materials requirements for our nation's defense are based upon the continued operation of the reactors at Savannah River, all of which are overage—excuse me. Let me restate that—over design life, and on reduced operating levels.

We have gone into that repeatedly in the past, and yet I believe people have to understand the critical nature of the choices that we are making, and the fragile nature of those choices when we are dealing with reactors of that type and age; also dependent upon the continued movement forward on the SIS, which I appreciate and that I know you appreciate, but again, we have to be very open about that.

Mr. Chairman, I have some additional questions which I will ask, but I will yield to my colleagues the opportunity to ask their questions since I have taken some time to, in broad strokes, sketch some concerns I have with the shape of the budget, and I think the questions they ask fit into that context as well.

Senator Evans.

Secretary HERRINGTON. Thank you, Senator McClure.

Senator EVANS. Thank you, Mr. Chairman, and as long as we are amening, let me amen virtually everything you said in your statement as it related to uranium enrichment revenues, as it relates to the way in which we will fund the supercollider, certainly not at the expense of other energy research and conservation.

The need to examine new technologies, high temperature gas reactor or whatever other technologies there are as a research project rather than tying them too closely to guarantees that we need in production and in other ways.

Let me start the questions by asking if you could describe for me the recent problems at the L-Reactor at Savannah River and the resulting actions that were taken by the department in relationship to those happenings.

Secretary **Herrington**. Senator Evans, if I could, I would like the Acting Assistant Secretary for Defense Programs, Troy Wade, to respond.

Senator **Evans**. Surely.

Secretary **Herrington**. Troy, if you would go over L-Reactor, I would appreciate it.

Mr. **Wade**. You will recall, Senator Evans, that the L-Reactor power issue came up a couple of years ago, and the first power reduction was made when it was determined internally that the results of a very low probability accident situation might result in some fuel damage. After Secretary Herrington asked the NAS to look at the reactor, they wanted to add another degree of conservatism, and so the power levels were reduced another 25 percent, roughly, to get down to 50 percent of nameplate power.

Very recently there have been adjustments in the power levels of all three reactors. P and K reactors were adjusted very slightly upwards in early February, that being the result of changes in the temperature of the inlet water to those reactors.

In early February as well there was a discussion about the degree of conservatism in the arithmetic way that one got to the power level for L-Reactor. This reactor has a different core because it makes a different kind of material, and this question of the very low probability event came up again. There was a meeting on February 12 in which representatives of the Du Pont Laboratory, the Du Pont operating people and the DOE people agreed that the power ought to be reduced an additional 5 percent, and that was done.

Senator **Evans**. When you say arithmetic calculation, that sounds like it is something separate from reality sometimes, but is that not what we are doing in all cases when we are measuring those safety requirements, is doing a mathematical calculation of some kind to get the safety requirements we think are necessary.

Secretary **Herrington**. I think that is a correct statement, Senator Evans. The statistical base for the level of power operation in L simply did not exist to our satisfaction in light of the Academy's review. This final 5 percent reduction we consider only temporarily during the time that we need to validate what we are doing. We fully expect that to come back up again. It was for safety only in light of the fact that it was not needed to operate at a higher level.

Senator **Evans**. You mentioned the P and K, there was a slight upgrade in production because of changes in temperature of the unit water.

What caused the changes in temperature? Is it seasonal?

Secretary **Herrington**. Seasonal.

Senator **Evans**. So they would go down again in the summertime?

Mr. **Wade**. L-Reactor is the one where we make the significant adjustments in the summertime. On P and K, we have a new set of instrumentation that measures actual inlet temperatures and allows more finite adjustments to be made than in the past, and that was what was reflected in the 3 percent change in early February.

Senator EVANS. But is it not still accurate that if it is going up in February because the water is colder, it is going down again in the summertime on a seasonal basis if water is warmer.

Mr. WADE. That is correct, sir.

Senator EVANS. Mr. Secretary, and maybe Mr. Wade needs to answer this one as well, what in your view is the likelihood that all three of the current reactors now operating are going to live out a life or beyond a design life and be actively operating and producing our defense material needs 15 years from now?

Secretary HERRINGTON. I think the chances are good that they will live out design life and go beyond. Many of our government facilities of this magnitude certainly have been capable of safely going beyond design life. I can give you a number of examples.

Senator EVANS. To what degree are you willing to bet national security on that?

Secretary HERRINGTON. I do not think we have bet national security. Let me give you an example.

The Special Isotope Separation program, which would help us meet our plutonium needs in the next decade in the event of a national emergency is a reactor independent source of plutonium which will be available in 1995. We have programs in place for accelerated scrap recovery, all of these put in place by us in the last two years to cover such an eventuality while we build a new production reactor, which I think is essential.

Certainly a recent reduction in plutonium requirements leads us to believe that we will have sufficient plutonium for the foreseeable future. If that is not the case, we do have alternative plans.

What I am saying is that I do not think you have to bet the whole national security apparatus on a life beyond the design life of those three reactors.

Senator EVANS. The case of plutonium is one thing. The case of tritium is quite another.

Would you care to comment on what alternatives, if the reactors were to be necessarily shut down in the intervening period, what alternatives are now available that the department suggests for tritium production?

Mr. WADE. We have looked at several alternative schemes, Senator, and although as the Secretary says, right now we do not know of any life limiting features on the three Savannah River reactors, we are concerned about continued tritium supply, and we have looked at contingencies if we had a catastrophic failure at Savannah River. We would have to provide that information to you under separate cover, if that would be all right.

Senator EVANS. By separate cover, you are saying that it is necessarily going to have to be supplied on a classified basis?

Mr. WADE. Part of it is yes, sir.

Senator EVANS. Part of it is.

Would you care to share what is not classified?

I think it is important for us to understand as well as we can, for the country to understand how we are going to handle what at least this Senator believes is a very serious national security issue, and that is how we are going to maintain—I for one believe very strongly in the INF Treaty. I am going to work very hard to see if we cannot relieve and release some of the dependence on nuclear weapons that we have had over the years, but I am not prepared to give them up unilaterally and right now. And I think that we have got to be very careful that we maintain, and I agree with you and the administration on the need for a new production reactor or reactors, but what if something happens?

What can you tell us without going into classified material as to how we would handle a breakdown tomorrow or the next say that would prevent us from using those two reactors for tritium production?

Mr. WADE. Well, there are several ways, and let me mention a couple, Senator. Of the three reactors at Savannah River, two are able to produce tritium. L-Reactor produces heavy metal. We intend to proceed with the environmental work necessary to allow tritium production on L-Reactor as well. That is one form of a backup.

Senator EVANS. But that does interfere with whatever you think may be necessary in the plutonium production side at that point.

Mr. WADE. But it does give us flexibility. It does give us the capacity to move either way, which we think is very important.

Other sources that we have looked at include squeezing down the existing pipeline between ourselves and the Department of Defense, and that is possible for a limited amount of time. There are also some preproduction options——

Senator EVANS. You say squeezing down the pipeline. Is that just reducing inventory that is on its way?

Mr. WADE. Reducing inventories, yes, sir.

We have looked at preproducing which one can do to a limited extent, but that is an option available. We have looked at commercial production. We have looked at supplies from other locations.

Senator EVANS. When you say commercial production, are you saying converting a commercial plant to produce weapons materials?

Secretary HERRINGTON. Well, I think if I might answer that, we are getting pretty far out on contingency plans. I do not think—we have obviously looked at WNP-1 for a new production reactor conversion, but as far as taking existing commercial reactors for weapons activities, we have not contemplated this.

Senator EVANS. Well, do you have something else in mind then?

Mr. WADE. No. WNP-1 is the only light water plant we have looked at. The other options——

Senator EVANS. You are not talking, when you say commercial, you are not talking—well, I think the Secretary cleared that up. You are not talking about potential conversion of any existing, operating commercial plant for that kind of thing.

Secretary HERRINGTON. That is correct, we are not.

Senator EVANS. Well, we may want to get further information which, I think you are right, we are getting close to a classified basis on how far we go on that.

I do have a number of questions that are more, as we all do, are more parochial in nature on the future and direction of the various elements at Hanford as a result of the close-down of the N-Reactor.

But could you describe for me the other facilities in the Department of Energy's whole regime that will be affected by the fact that no longer will we be required to produce materials for the N-Reactor, the feed materials for the N-Reactor.

Secretary **Herrington**. Senator, I would appreciate supplying that answer on the record in writing to you.

Senator **Evans**. Good.

Secretary **Herrington**. We have all read the article on Fernald and some of the others. That is not the whole story on some of these facilities, and I would like to be able to provide that answer to you either in a briefing or otherwise.

Senator **Evans**. All right.

Yes, if you would like to provide that for the record, I think that what I would like to see is we have reduced to whatever degree a number of elements that are required to supply and feed the N-Reactor all the way down the line, and it would be helpful to know what those impacts are, where they are located, and what effect that might have on the budget in terms of those other plants.

Secretary **Herrington**. Yes, sir, we can provide that.

[The information follows:]

The major facilities in the Department which would be impacted by the decision to not produce materials would be the Feed Materials Production Center (FMPC) near Fernald, Ohio and Reactive Metals, Incorporated (RMI) near Ashtabula, Ohio.

The FMPC currently produces fuel for the N Reactor, and production for that purpose will cease in the near future. RMI, a subcontractor to the FMPC operating contractor, extrudes the fuel for the N Reactor. N Reactor residues currently stored onsite at FMPC will be processed. Processing of all in-stream products for the N Reactor will be completed to assure safe handling and storage. At the present time, a limited number of FMPC and RMI operations are involved in work for the N Reactor, and no significant impacts on current year funding are expected. The impact of the N Reactor decision is currently being assessed. Other production operations and waste management activities are not affected by this decision and will continue.

The only other facility potentially impacted by the N Reactor decision is the gaseous diffusion plant at Paducah, Kentucky. This facility periodically provides small quantities of enriched uranium to FMPC for raising the enrichment of the N Reactor fuel material returns to the level required for re-use. Since current supplies were adequate, no provisions had been made in FY 1989 for this material; therefore, there will be no impact on this facility in FY 1989 as a result of the N Reactor decision.

Senator **Evans**. I just have one other question before turning to my colleague from Alaska. Maybe it will lead in to questions he might have.

I am sorry, there are two, if you would not mind.

Senator **Murkowski**. You have the floor.

Senator **Evans**. Well, I do not want to keep it forever.

Senator **Murkowski**. I do not want you to, either.

Senator **Evans**. On page 2 of your budget presentation you say we must continue progress in energy conservation and renewable energy technology whenever this is cost effective, and we must increase the contribution of nuclear, coal and natural gas to energy supply by improving the economic competitiveness of nuclear power by demonstrating the ability to burn coal cleanly and by deregulating natural gas.

All of these in some combination make up an energy policy for the country.

How do you determine which are the best priorities, and which we should do first, and how we should go about this question when we have such variable ways of meeting some of our energy supplies?

Secretary HERRINGTON. I think that is obviously a difficult question, and it is one that reasonable people differ on.

Certainly the way that this Administration has gone about that can be evidenced by our budget submittals for the last few years as to where we rank the priorities on these various technologies, given other things such as the budget summit and the Gramm-Rudman-Hollings agreements. There is not unlimited money, and we have been through one hearing recently where the questioner asked one of us, okay, we have your budget. Now, if you had more money, where would you put it?

That does not tell the whole story, and certainly there are items in here that we would like to see funded a little better, but I think you have to look at this picture overall with the total government financial situation in your mind.

I think we have made some pretty reasonable choices in our research and development with the limited funds that we have. Senator McClure made a statement a minute ago that our fossil budget is down. That is true. Our conservation budget is down.

But what he says does not take into consideration that we have put well over several billions of dollars through the petroleum overcharge claims back into the States for conservation purposes. The fossil R&D budget does not take into consideration a $5 billion clean coal technology program. Certainly I think these areas are well taken care of, but maybe not as well as each particular person would like in their particular area.

I think you have to look to me on two things—number one an energy policy that says adequate supplies of energy at a reasonable cost, and number two, you simply have to keep options open. You have to try to design these programs to look at as many things as you can in the future. I think we have tried to do that.

Senator EVANS. Well, I was not talking just about energy research and development. I suppose we could get into some discussion as to whether we have—we have consistently been in a battle back and forth between the administration and the Congress over the last, as long as I have been here, at least, with reductions and eliminations on a wide variety of energy research and development proposals which every time the budget comes up here these are reduced or eliminated, and every time we deal with them they are put back in again, and then they got out and in and out and in, which I am not sure is a very good way for those who are charged with carrying out the program to feel any consistency and be able to carry on their activities very well if they never know from one year to the next whether they are out or back in again.

Secretary HERRINGTON. I think a lot of that is true, but bear in mind, a lot of the things that are put in have nothing to do with energy. We are building buildings around the country and running projects that simply do not have any relation to energy. So I think if there is a battle, there are legitimate arguments on both sides on a number of these issues.

Senator EVANS. Well, and I would agree with you, I do not think we ought to be fussing around with things.

I will stop with that. I will not even ask about the U.S.-Japan Nuclear Agreement, because that would deter my colleague from Alaska over what he was going to ask, except just one question.

Do you enthusiastically support the U.S.-Japan Nuclear Agreement and believe that it does represent substantial increase over our current ability to control and work with Japan in these affairs?

Secretary Herrington. I like the agreement, and I enthusiastically support it because it keeps us in the game, keeps us playing with technologies and with the future of this particular industry. It keeps us actively involved with a country that is on the cutting edge of most of the technology that we need.

There are concerns that are being brought up, and I am sure that Senator Murkowski will bring up some, but overall, if we do not go forward with this agreement, we really step out and we let some other country step in to our place, and there are plenty that are willing.

Senator EVANS. Thank you.

Thank you, Mr. Chairman.

Senator MURKOWSKI. The Senator from Washington was correct, I was going to bring that up, and I will anyway, but before I do, Mr. Secretary, I want to welcome you on behalf of all of us on the Energy Committee and touch on something a little closer to home.

I note in your Power Marketing Administration, on page 9, you indicate the Department will continue its efforts to sell the Alaska Power Administration and will seek enactment of legislation to study divestiture of the Southeastern Power Administration.

The statement preceding the reference to the Alaska Power Authority was the statement concerning the Power Marketing Administration's involvement in divestiture for Bonneville Power, financing the third AC.

I note you do not use the word "sell" in Bonneville, but in Alaska you do specifically say "sell," which sounds to me like you are still in the process of studying the merits of divestiture vis-a-vis the reality of a decision to sell the Alaska Power Administration, and I gather that there have been estimates that the government may have as much as $275 million in estimated replacement value with current investment somewhere around $110 million.

Of course, concern is expressed by the users as to whether or not it is your intention to sell at your replacement value or present marked-down value because it would have a substantial effect on the ratepayers. And of course, the ratepayers are the taxpayers, are the same that you and I both relate to.

I wonder if you could indicate, first of all, the assurance that it would require legislation to authorize the sale, and secondly, if you could give us some idea of what your bargain basement price is today.

Secretary HERRINGTON. We certainly have always proceeded on the assumption that it would require legislation. We have never contemplated doing this administratively.

As far as the prices, I am not in a position to say today what our bargain basement price is.

How much do you have on you?

Senator MURKOWSKI. I am wondering if there is a policy to take a replacement or a written down value or whatever the market will pay.

Obviously the ratepayers are more than casually interested in just generally what is Energy's policy in disposing of it?

Secretary HERRINGTON. If I could, Senator Murkowski, I would like to ask Assistant Secretary Fitzpatrick to answer that for you on our policy.

Senator MURKOWSKI. I will listen with rapt attention.

Miss. FITZPATRICK. Senator, when we began the process of divestiture for the Alaska Power Administration, we stated as our policy that we were not asking for a present replacement value for those facilities, so we realized that that was unreasonable due to the fact that part of the facilities are 30 years old and have already been paid down substantially by the users. So that is not a criterion for determining the price.

The price should be a fair return to the taxpayer. It should not have a disruptive rate impact, and we are in the process of negotiating the two proposals that we have received for the two facilities.

Senator MURKOWSKI. Well, that is encouraging. You have given me the answers that I had hoped for, so I will not prolong that particular line.

Another question, however, involves recent activity by the Energy Committee, and I noted in your energy policy goals, Mr. Secretary, one of them was a recommendation, and I quote, open up the Arctic National Wildlife Refuge and other market-based reforms, et cetera.

There are those that have suggested that it is premature, it is not needed, we should follow up the CAFE standards and various other forms of conservation, and that indeed, at such time as we need ANWR, why, that is the time that we should initiate exploration and potential lease sale.

Why, in your judgment, Mr. Secretary, does this not make sense?

Secretary HERRINGTON. Well, I think there are a lot of things in this issue that do not make sense. I was noticing in the paper this morning that the headlines in certain of the industry papers reflecting on the action of the Energy Committee read Victory for Oil Industry, and that is crazy. It is victory for the country. We need this oil for our energy independence, to keep oil coming down that pipeline.

This is not an industry versus anybody else. We need the oil. Every study we have shows we need this oil. And it can be done in a balanced way. We have shown that at the North Slope good environmental policy and good energy policy can exist side by side, and I think we have proven that beyond a reasonable doubt.

And the country will be the winner here. This is a victory for the country if we find substantial oil deposits in that particular area.

Senator MURKOWSKI. Well, Mr. Secretary, you are a voice crying in the darkness because you are echoing my particular attitudes, and as you know, the committee came out with an 11 to 8 vote in favor of taking the matter to the floor of the Senate. So it is my evaluation that as a consequence of our commitment in the Persian Gulf, where I think we have got as many as 30 ships and 15,000 American military personnel ready to sacrifice their lives if necessary to keep oil flowing in that part of the world and we are not necessarily the main beneficiary, but Western Europe and Japan are, that that indeed is food for thought to achieve at least a knowledge of whether there are substantial reserves in ANWR, and the only way it can be done, as you have stated, is to proceed with leasing.

One more question very briefly on that aspect. As you know, Alaska is currently producing about 25 to 26 percent of the crude oil produced in the United States. That oil moves down that pipeline approximately 2 million barrels a day. Half of that oil is consumed on the west coast of the United States. The other goes down to Panama and goes from the Pacific isthmus to the Atlantic isthmus of Panama, through a pipeline that is not part of our security oversight in the Panama Canal corridor. It is aside and wanders off, and is owned by the Panamanian government as well as a private corporation in New York.

My concern, Mr. Secretary, in view of the fact that there is approximately 12½ percent of our crude oil going through that pipeline daily, and it is exposed to the ravages of whatever is the security risk today in Panama, what you and the Department of Energy are doing to address the security interest that we have in that facility, recognizing that there are exposures of the new government, the military leadership, the input of potentially Castro and others who are not on the top of our popularity list in Central America concerning Ortega that may want to wield some influence in Panama as a consequence of this opportunity.

Secretary HERRINGTON. As you know, we have a substantial safeguards and security operation in the Department, an Energy Emergency office that works very closely with the Pentagon, and the implementation of any security measures there would be through the Southern Command, but I am not unaware of, and I think it is very important that you should point out, the tremendous amount of oil, U.S. oil that flows through that pipeline at this time.

Senator MURKOWSKI. Well, it would seem to me, and I just pass this on, that that is an area of our exposure that as far as I know is not patrolled, it is patrolled obviously by officials of the Panamanian government that are associated with the pipeline, but there certainly is an exposure there that I do not think has been noted by an awful lot of people, and I think it bears some notation, Mr. Secretary.

One more question, and I will try and be brief because I know there are other colleagues that are interested. This is a follow-up of Senator Evans' question about our pending treaty with Japan on plutonium transportation and the concerns that various Members have over specific aspects. Some Members, of course, are opposed to any utilization of nuclear energy for any means. Others are concerned over the departure of policy and control with the Non-Nuclear Proliferation. And others are concern with the safety of transportation.

My question to you is a broader one, if that is possible, in the reference that you made to turning over, I think on page 8, to the private sector, the goal of the administration is to turn the Uranium Enrichment Enterprise over to private sector management.

Now, how we get there from here, in my scenario, is that this pending agreement is going to address the movement of plutonium, but plutonium comes from the reprocessing of enriched uranium, in the conventional sense, and that is going to occur in France in this particular scenario with the Japanese, but the Japanese are going to move the plutonium from France to Japan either by air or surface, and the question of whether they move it over Canada or Alaska or the State of Maine or the State of Washington has still to be spelled out.

But if you are talking about turning over to the private sector uranium enrichment, you imply that the source of uranium enrichment, yellow cake, or perhaps the mine that has been recently reopened by Chevron in Arizona, and they are very anxious to sell substantial reserves of yellow cake to somebody who would have the Federal Government buy it and then move it out in the marketplace, is it conceivable that the Department of Energy would work hand-in-hand to encourage the Japanese as a condition to the treaty agreement to buy more enriched uranium from the government that enriches it, but it really comes from the private sector?

And I wandered into the question enough to, I think, have you get an idea what I am talking about.

Secretary HERRINGTON. We would strongly support further Japanese purchases of uranium in the U.S., and I think it is something they should do, but not just in connection with this treaty, but with all trade issues that are before us now.

Senator MURKOWSKI. Well, is it not traditionally that the Japanese will buy their enriched uranium wherever they can get it the cheapest?

Secretary HERRINGTON. Yes.

Senator MURKOWSKI. Or wherever they can get it done the cheapest, but they want this treaty.

Secretary HERRINGTON. Yes.

Senator MURKOWSKI. In this for the United States is, I assume, a continuation of matching technology with the Japanese needs for reactors and various other possibilities, but there is also an opportunity to sell a large amount of yellow cake which somebody is going to have to enrich so that the Japanese can get the enriched uranium and utilize that and send the high level nuclear waste to France, and the French reprocess it and send back the plutonium, and the plutonium regenerates the reactor, and you are talking about aiding the private sector in uranium enrichment.

Would this not be a way to substantially do it? I mean, just to turn it over to private industry is not going to do it unless you can generate some substantial volume.

Secretary HERRINGTON. I think the Senator makes a very good point on the issue.

Senator MURKOWSKI. Well, the Senator is motivated by the economics to a large degree.

Last question, and this involves national energy policies in regard to offsetting our tremendous deficits, and we look at our budget deficit and trade deficit, and they are either one or two or two and one, as far as national issues of prominence.

Is there any merit to utilizing the policies associated with energy sales, recognizing that Japan, Korea, Taiwan are totally energy dependent, they have to buy from all over the world, why do they not buy from their best customer, the United States? We sell less coal to those countries each year. They buy more from Canada.

Is it conceivable that you could work into a national energy policy an offset to our trade imbalance inasmuch as they have to buy the energy from somebody, for example, why not buy the gas from the United States where we have got 26 trillion cubic feet that we found while looking for oil in the North Slope? That would be big dollars, and when you talk about apples from Washington or grapefruit from Arizona, frankly, you are not talking—and a few potatoes from Idaho—you are not talking about an awful lot of bucks. But you talk about a 30 year contract for energy in the volumes that we are talking about, you are talking about billions and billions offsetting the trade deficit.

Is it conceivable that your agency could use the leverage that you have control of to offset perhaps some of the trade matters associated with energy sales?

Secretary HERRINGTON. Well, we push very hard for coal sales in Japan, as you know. Their answer always is that the Australian coal is $19 a ton cheaper than the American coal, and there is resistance to buying more coal from the U.S.

I strongly support export of Alaskan oil to Japan. We have a terrific political problem in the United States. Every time I say that, and I have said it again today, we will get letters from unions all over the country asking us not to do that. And of course, the new initiative of natural gas from the North Slope to be exported to Japan I think is an excellent idea. Otherwise the Japanese will end up buying all their natural gas coming down from the Sakhalin Islands from the Soviet Union, and that is not a good idea for American security.

So I think you are touching on an extremely important issue.

Senator MURKOWSKI. Well, how do you leverage that, to get them to buy from us instead of the Soviets or Indonesia?

Secretary HERRINGTON. I am not so sure that the Secretary of Energy can do that.

Senator MURKOWSKI. Who can?

Secretary HERRINGTON. I think a lot of people can. I have a lot of ideas on trade policy, and I am sure a lot of you do, too. I do not think it is the job of the Secretary of Energy to set trade policy, and I am going to duck that question, but I think there are ways that you can lever yourself into some of those positions that I think can be good.

Senator MURKOWSKI. Well, you might talk to the Secretary of State, Secretary of Commerce, USTR.

I thank you, Mr. Secretary.

Secretary HERRINGTON. Thank you, Senator Murkowski.

Senator DOMENICI. Mr. Secretary, first I want to apologize for not being here for more of the hearing. We were having, incidentally, Senators, we were having a very interesting debate downstairs with Paul Kennedy, the author of the book, down in the Budget hearing, on burden sharing, and we had Ambassador Kirkpatrick there. As you might suspect, it was a pretty interesting dialogue between the two of them as to is America in decline or not. And that accounts for my tardiness.

Mr. Secretary, let me first say that wherever, whenever we discuss America's role in the world and the huge new industrialized free society that is out there, Japan and Europe alive, and competitors in the world, almost every conclusion is that the United States of America must do better in science, applied science, and research.

You can hear from almost any group and they end up concluding that among the things we must do is use our knowledge base better, use the scientists and engineers that we have got better, and encourage more to join the army of scientists and engineers that we have got.

Now, having said that, Mr. Secretary, I am not sure that this statement is correct, and I hope you do not challenge it because I would like it to puff you up so you will feel very involved in America's future. I have concluded that you are in charge of more scientists than any other institutional head in the world. As I view it, 22,000 scientists, M.A.s and Ph.D.s and bachelor's degrees are under your control, more or less, in the National Laboratories, and I think that is a marvelous asset for the United States of America.

Now, having said that, I want to compliment you if you were successful in getting the President in his budget, a very tight budget, to dramatically increase expenditures in areas of science and research, and in particular, in your department, one that excites me very much, a major increase in activities in your department for the mapping of the human genome.

I am convinced that the mapping and sequencing of the human genome is the next scientific tool for the wellness of Americans and civilization. I believe they are going to find—they are going to give scientists a tool to find all kinds of medical cures once we have mapped and sequenced in whole or partially the genes in the human body.

Now, Mr. Secretary, let me ask you with reference to that particular program, genome research in mapping and sequencing, as I understand it, you are asking for $18 million new money for your department's role with the other institutes in our country in mapping and sequencing, is that correct?

Secretary HERRINGTON. That is correct, sir.

Senator DOMENICI. Now, Mr. Secretary, how do you perceive the significance of that effort, and for us as a committee, is that an important activity as you see it for America's competitiveness and for health care in the future?

Secretary HERRINGTON. Yes. I do not want to be repetitious, but everything you have said about that project I agree with. I think it is extremely important, and I do not think we can overemphasize the potential of what we can learn from that particular endeavor.

Senator DOMENICI. And you want the Department of Energy to play a role?

Secretary HERRINGTON. Yes, I do.

Senator DOMENICI. Now, Mr. Secretary, with reference to the general proposition of the utilization of your laboratories in the American domestic, nonmilitary marketplace and with universities in research and applied technology, might I ask you, do you believe you are making some advances in permitting the National Laboratories that you fund, principally, and manage in a managerial role? Are you moving in the direction of permitting them to work in the American marketplace with companies and universities in the development of science and technology for the American marketplace?

Secretary HERRINGTON. I think a fair answer is that we are working in that direction, and we are making progress. Are we doing enough? The answer is no, we are not. I think——

Senator DOMENICI. What can we do to help you?

Secretary HERRINGTON. I think in the next year we can make more advances in that particular area, and I would be pleased to work with this committee on it. The time that I have been in this job I have seen more and more need for that particular function to take place. I think they need to become more related with the private sector, for several reasons. One, there is a defense orientation; if that should slack off, I would like to see the survival of the labs as healthy as possible, and that would only happen by working through programs other than defense. We have to plan for that.

Number two, I think some of the cutting edge of the technology in the U.S. is in the private sector, and I think the labs are too smug in some of their opinions that they are the leading edge of all technology. This is one of the discussions that I had with the new director of Livermore Laboratory during the interview process, a man who has worked there over 30 years. He said, sometimes we think we have all the answers, but Mr. Nuckles, who is the new head of Livermore, said we do not. He said we need to have more cross-fertilization.

Senator DOMENICI. So you are saying that they might, by bringing the private sector into closer contact, they may be more—the labs may be more successful at what they do.

Secretary HERRINGTON. Yes, there is no question about it.

During the interview, John Nuckles said to me there is no excuse that we do not have 15 dedicated scientists a day working on superconductivity, and we do not, and he said, that will be one of my first initiatives. And he is quite correct in this approach. Now, that is not a defense activity, but he sees where they should be going.

I am supportive of this effort, and I would like to be more supportive of it.

Senator DOMENICI. Let me move to another subject.

With the negotiations with the Soviet Union first on the INF Treaty and then, as we look down the line, it appears to this Senator that the science of verification and the applying of the various verification tools into some comprehensive kind of approach is a huge area of invigorated and new activity for the United States Government. Your laboratories have been on the cutting edge of verification to this point in our verification history.

Might I ask, in light of the new demands for verification technology and strategies, do you perceive the Department of Energy to be the department that should take a lead role in the development of such a science and strategy, and if you do, have you so expressed yourself as this idea is discussed within the administration's Cabinet level people?

Secretary HERRINGTON. Well, I have expressed that desire. The cutting edge of American knowledge and technology in this field exists in the laboratories, and more specifically, in Los Alamos and Livermore and obviously the Department of Energy is intimately involved in it. I do not see us backing away as an Administration from a fulfillment of that responsibility.

Mr. Troy Wade, our Acting Assistant Secretary for Defense Programs, made the trip to Moscow with the U.S. negotiating team, and we are intimately involved in all phases of the negotiation on verification.

Senator DOMENICI. May I ask Mr. Wade a question on that subject?

Secretary HERRINGTON. Certainly, yes, sir.

Senator DOMENICI. Do you see a need for a consolidation institutionally of verification technology and strategy? Is it out there but too spread out? Should we focus it with some kind of an institutional focus, and if so, should that be within the Department of Energy?

Mr. WADE. I certainly think it needs to be focused, Senator. As you well know, now that there has been a determination that there will be a verification entity within the Pentagon, they are now trying to put together the technology to support that, and in almost every verification regime that we are talking about, ultimately they are turning to Livermore or Los Alamos or Sandia. It needs to be more focused, I am sure.

I can only speculate on where it should be focused.

Senator DOMENICI. Mr. Chairman, are you running out of time?

Senator MCCLURE. Go right ahead.

Senator DOMENICI. Let me suggest to you that I understand what the Department of Defense is doing. Our President has signed a treaty that we are going to be asked to verify, and so they are busy setting up the literal mechanics for the on-site inspection activities, and I understand that. You are helping them, but that is what they are doing.

My question, and I think you perceive it as such, has to do with the science and the strategy of verification, not the implementation of a team to be able to do the on-site inspections required by this first treaty. I believe the Department of Defense must do the latter, but I think the institutional evolution of strategies and science of verification is a completely different thing, and the expertise has been in the Department of Energy, quite by accident, but it has been there, is that not correct, between the three major labs. That is where it is, is it not, most of it?

Mr. WADE. That is correct. I agree with you, Senator, and the point I was making is that it was not until these sudden new verification requirements became a reality, did people focus on the science necessary, and that is why they have turned to the DOE laboratories.

Senator DOMENICI. I have one last question.

First, Mr. Secretary, I want to compliment you. I believe you have done more in the last 18 months to make the National Laboratories of this country relevant to today's problems than any of your predecessors. You have tried very hard to get them involved in superconducting research, trying to set up centers in that regard so that we capitalized on the tremendous talent that exists.

One of the major shortcomings remains, and that is the perception on the part of American industry that the National Laboratories are not as relevant as they should be, not as friendly, difficult to work with, difficult to extract patents, copyrights and matters of import to the private sector from them, the length of time it takes to get such information out of the laboratories and into the marketplace, and I compliment you for trying to break down those barriers.

But I believe we have a long way to go, and I personally think that we ought to build on the institutions we have, and we have them. So I will be working with this committee and hopefully you will help us try to make those kinds of activities more user-friendly to the American universities and American businesses in various ways.

You have expressed yourself heretofore on that, and I compliment you for it. I also want to close this remark by telling you we may get the first ever National Science Foundation grant which puts together private sector university and a National Laboratory, and you know that you were left out of that cycle when they started it. You are in that cycle now, and I hope you will continue to push that the centers of excellence may indeed be built around your laboratories using universities and private sector activities.

Thank you very much, Mr. Chairman.

Thank you, Mr. Chairman.

Secretary HERRINGTON. Thank you, Senator.

Senator MCCLURE. Senator Wallop?

Senator WALLOP. Let me echo Senator Domenici's statement about your attitude and achievements with the labs. I think John Steinbrenner notwithstanding, that if America's survival is to be dependent on one thing, it probably will not be Olympic athletes in boot camp, but an educated, scientific, purposeful nation, and I think that the labs are key to that, even as they are more so the way you would like them to be.

I am concerned about one thing. Let me ask you this. What would a test ban below 10 kilotons do to both national defense and the National Labs?

Secretary HERRINGTON. We do not favor that, and we have been on the record both inside the Administration and in front of Congress. It does not give us adequate flexibility to carry out the mission that has been given to the labs and to the defense establishment that we work with, and we would strongly object to that.

Senator WALLOP. Can you sustain an appropriate strong scientific cadre if you get into that test ban?

Secretary HERRINGTON. I think we have experience to draw on from the 1958 Test Ban Treaty through 1962 when we did lose a substantial amount of personnel who, as scientists are attracted to other fields where there is more productive work, and recruitment of scientists for the National Labs is a big problem.

Another thing we discussed with the new directors of Los Alamos and Livermore when they came in was how are you going to recruit? And you have touched on it. In order to recruit good people, you have to have challenging programs, and I think that type of a program is no longer one that is interesting as well as rewarding.

Senator WALLOP. Let me urge you to continue to say out loud, in public, and as often as you can. I think a great deal of America does not understand the critical nature of those labs, and how much they mean to both our national survival, which is reason enough, but to our total national effort in science, and I think somehow or other if that message does not get across, if they are not viewed as more relevant in the private sector and more relevant by the universities, I guess I would have to say that if I were looking around and about to see who was more arrogant in the field of science, I would probably put academia a little bit ahead of National Labs. But I think the collective effort has now—you know, it is a matter of some national urgency.

Let me wing down from those lofty heights to some more parochial issues. You know or are aware of the bill that this committee passed the Uranium Revitalization Act, and you know that the bill replaces Section 161(b) with an import fee.

There is some question that the provision conflicts with the U.S.-Canadian Free Trade Agreement, although the fee is phased out over several years, as are other trade requirements in existing law. In a recent letter you stated that you would be willing to meet with supporters of the bill to discuss the issue, and I would just like to ask you if that still remains the case, that you would meet with us.

Secretary HERRINGTON. I would be happy to.

Senator WALLOP. We would appreciate it.

I think our issue is plainly parochial in that the uranium industry is vital to Senator Domenici's state and my state. We have that other kind of background feeling that it is probably pretty parochial from a national standpoint, that it is important to America that we have some plausible uranium industry that exists within the country.

What we are trying to do is not blow apart the agreement but seek a way to make that industry have an opportunity to survive in the national interest when we meet that kind of a direction we are pursuing in the transition period.

The other area is that once again you have submitted a proposal for the sale of the petroleum reserves at Elk Hills and Teapot Dome, and I fundamentally agree that the government should not be in the oil business, but there are some questions I would like to ask about the sale of these reserves, particularly Teapot Dome in Wyoming.

Do you have any idea how much money that field provides now under the present arrangements to Wyoming?

Secretary HERRINGTON. How much money it supplies to the State of Wyoming?

Senator WALLOP. To the State of Wyoming.

Secretary HERRINGTON. How much would it supply after we sold it in tax revenue?

Senator WALLOP. I guess that would be the relevant question.

Has there been any contact with the State of Wyoming about the sale?

Secretary HERRINGTON. I think we are estimating sales revenues in the range—I want to check this with Assistant Secretary Wampler—in the range of $23 million. I think that is our range.

Mr. WAMPLER. Yes, it is $21.1 million and our expenditures in FY 1987 were $13.6 million.

Senator WALLOP. Have you been in contact with the State of Wyoming, officials from the State of Wyoming, either the Governor's office or the oil and gas, Mr. Basco?

Mr. WAMPLER. We have not specifically contacted them with the Shearson Lehman marketing plan, marketing report, but we certainly would be glad to do that.

Senator WALLOP. I would like to ask you if you would do that. One of the problems that states have, they know they have a certain amount of money coming in from a certain set of arrangements, and all of a sudden the arrangements are changed. They have budgeting problems, as we do, and they are not quite certain what is going to—what a likely scenario, financial or otherwise, would be for them.

If you could take time and inform them, I know the state would appreciate it, and so would this Senator.

Also, if you could provide me or them with the details of the government's contracting arrangements for the operation and maintenance of the field. We have heard from several constituents that are nervous about this sale and the future of their jobs should it go through. I am not certain that the news you would offer would be good news or bad news, but I am at least certain it is better than speculating out into the future.

And if you could do that for us.

Mr. WAMPLER. Certainly, I will be glad to.

[The information follows:]

NPR 3 CONTRACT DETAILS

Naval Petroleum Reserve No. 3 is operated by Lawrence Allison & Associates West, Inc. under a five year contract which began October 1, 1986. The contract allows Lawrence Allison to recover all of its costs plus a fee. The fee is awarded to Lawrence Allison each quarter based upon an evaluation of how well the contractor performed against plans, controlled costs, responded to market and field conditions, administered the field, and generally maintained profitability.

The Department of Energy oversees the field and the contractor with 15 Government personnel on site. The Government personnel have direct management responsibility for the field, while the contractor performs day-to-day operations. The Government personnel also review proposals made for improvements in field operations by Lawrence Allison, perform reservoir analyses, and administer the business operations including sales. Additionally, the Government personnel oversee activity on the three Naval Oil Shale Reserves located in Colorado and Utah.

Senator WALLOP. Again, Mr. Secretary, let me add my words to those of Senator Domenici. There was a time when I really believed that the right thing to do was what the President said we ought to do, and that is disband the Department of Energy. I think you have made it relevant to the Government of the United States, and for that I salute you.

Thank you.

Senator **Domenici**. Mr. Secretary, might I ask if the proposals which I have put forth to amend the bill that I introduced last year on technology transfer, if you have had a chance to review the amendments that I propose to introduce with reference to superconductivity, semiconductor research, genome research, and making available a bit more autonomy for the labs to deal with research contracts? Have you had a chance to review that yet?

Secretary **Herrington**. I personally have not. I know that we are reviewing it. If you would allow me between now and next week to bring myself up to speed, I could get back to you on that.

Senator **Domenici**. I wonder if you would care to.

Would you prefer to wait for the Secretary to review?

Miss **Fitzpatrick**. Yes, Senator, I would.

Senator **Domenici**. We have presented them to her for presentation to you, and if that has not yet occurred, we will wait a week or so.

Secretary **Herrington**. It will be rapid.

Senator **Domenici**. Could I just ask about one other subject, and I do this now in particular with Senator McClure present because he is totally familiar with the waste isolation pilot project in New Mexico, and while it occupies a great deal of time and political thought in my state, it is, as I gather, rather relevant to Idaho that sometime in the not too distant future it be opened.

Am I correct, Senator McClure?

Senator **McClure**. You know that is true.

Senator **Domenici**. Now, having said that, might I again compliment you on another issue related to it, and ask you if I understand your budget correctly.

The United States Government has entered into a stipulated agreement settling a lawsuit some eight years ago with reference to the waste isolation pilot project in the Federal Courts of New Mexico and have most recently through your, through the Department of Energy, modified that agreement with reference to land withdrawal so that the land that it is not can be not only Federal Government but owned by you, by the Department of Energy for the Defense Department.

As part of that stipulated agreement, you have committed to exercise your best, good faith efforts, as I recall the words, to see to it that Congress appropriates money for the roadway need that are attendant to that project.

To this point, have I appropriately stated the status of things as you recall them?

Secretary **Herrington**. That is my understanding.

Senator **Domenici**. Now, in your budget, you have asked Congress to appropriate $43 million for roadway improvements contemplated by those various stipulated agreements and amendments thereto.

Could I ask you, Mr. Secretary, I assume that since you asked for that money and that is the first time you have asked for roadway money, first time any administration has, in spite of the agreement—we have had to put it in up here—I assume you think it is important that the Department of Energy, acting in behalf of the Department of Defense, that it provide roadway monies that it agreed to use the best efforts to obtain, that you agree that this is necessary for the State of New Mexico to get fair treatment with reference to that overall land withdrawal and the opening of that facility.

Is that a fair statement?

Secretary HERRINGTON. Yes. I think as long as it is couched in terms of us meeting our agreement under that lawsuit. I would not like to set the precedent of the Department of Energy taking over functions of the Department of Transportation in highway building, but I think this is a legitimate position to take to meet our commitments with the State of New Mexico.

Senator DOMENICI. And Mr. Secretary, so my friend who appropriates this money will know from whence you took the money, or in what budget you have put the money, do you recall what part of your budget you asked Congress to take this money from?

Secretary HERRINGTON. My accountant advises me that it is coming from unobligated balances from prior year funding.

Senator DOMENICI. But specifically from defense nuclear, is that correct?

Secretary HERRINGTON. That is correct.

Senator DOMENICI. And it is—you made that decision. That is not provided for in the agreement, right? That is your decision as to where you wanted it funded, is that correct?

Secretary HERRINGTON. Freely and voluntarily I made that decision.

Senator DOMENICI. There was not the least bit of coercion, is that correct, from no one, including the Senator from New Mexico, Senator Domenici, or the Governor or anyone else?

Secretary HERRINGTON. That is correct.

Senator DOMENICI. Thank you very much, Mr. Secretary.

Senator MCCLURE. Thank you, Senator.

And you are right that there are other people who are very interested in WIPP, and I would want once again to say on the record how much the nation owes the Senator from New Mexico for his responsible leadership in the area where responsible leadership is hard to find and was hard to find on the Congressional side in your offices, and I think the nation sometime will more fully recognize the contributions you have made.

That remains a very important project to the defense needs of this country, and there are a lot of people a lot of other places who look at that as an example of the way in which a responsible Federal program can be generated.

Senator DOMENICI. I might say to the Senator, you may not be aware of the fact, but a question has arisen with reference to water seepage, and in the interests of providing a neutral evaluation, the Department has agreed with the delegation and asked the National Academy to have a team of experts who have been involved in that project evaluating it from the beginning to report on the seepage issue as to whether it is serious or not, and I assume that is forthcoming in the not too distant future.

Secretary HERRINGTON. Yes, sir.

Senator DOMENICI. Thank you.

Thank you, Mr. Chairman.

Senator MCCLURE. Thank you again.

I want to ask three or four questions, three or four general areas questions. I will submit the balance for the record.

There have been some comments about the Price-Anderson bill, and comparisons have been made of the adequacy of protection under P.L. 85-805. I think it is fair to characterize that, that it is far worse than Price-Anderson certainly in terms of the public's protection. Even if we talk about the protection to the contractors and whether the contractors are willing to go forward under the provision of it, that discussion leaves out completely the question of adequacy of protection to the public, am I not correct?

Secretary Herrington. Yes.

Senator McClure. And I hope we will continue to make the point that Price-Anderson is a guarantee of recovery to the public for injuries which they sustain. So many times it is put out there as simply a way to shield a contractor against problems, rather than looking at the side of the way to assure the public and protect it. And that is what I believe is the primary reason to make a contrast between 85-805 and Price-Anderson.

I hope you will continue to make that point. The public law has no waiver of defenses, has no umbrella coverage of all subcontractors, has no assurance of prompt and equitable payments.

I believe that it is important for us as we make those comparisons to remind people of the reasons why Price-Anderson is important to us aside from the question of protecting contractors.

Mr. Secretary, facilities funding for nuclear research primarily at the FFTF, which is in Hanford, and Argonne West at INEL, have taken a substantial cut in the Fiscal Year 1989 budget request. I am particularly concerned about the $8 million reduction at Argonne West, which represents a 15 percent cut over this year's already lean operating budget.

At these reduced funding levels, can these facilities maintain a critical mass of people and support to allow them to pursue the vital research efforts assigned to them?

Secretary Herrington. It is my understanding, Mr. Chairman, that we had sufficient money in these to guarantee that they were healthy. FFTF and related, $55 million, up to $58 million, I realize that is overall, and you are looking at overall facilities. There is money in the SP-100 I think that can be used over in some of those programs.

I would like to respond to that a little better in writing to you.

[The information follows:]

FUNDING FOR DOE NUCLEAR TEST FACILITIES

Although the $110.7 million requested in FY 1989 for Facilities is $7 million less than appropriated for FY 1988, there is an additional $15 million for facilities operations contained in the Space and Defense Power Systems program (identified in the FY 1989 budget request as funding for irradiation and test charges). The net result is an increase of $8 million over the FY 1988 appropriation for facilities operations. The Department believes the total funding requested ($125.7 million) adequately provides for sustaining safe and reliable facility operations as well as necessary site and facility improvements. This level of funding fully supports the President's proposed Nuclear Energy R&D program for FY 1989.

Senator McClure. Would you do so? I would be interested in that response, and I look forward to working with you on it.

I know we have tough budgetary concerns, but I really am concerned about whether or not at some point you cut to the point where you simply have crippled the ability to do anything very effectively.

Secretary Herrington. I would agree.

Senator McClure. I hope we have not reached that point.

There has been some discussion about new reactors, and here again I want to talk separately from the question of new production reactors. I hope you will understand that when we are talking about new production reactors, we are talking about a future replacement for the Savannah River reactors.

I want to talk about that separately from that of the reactor design research. We have over the last several years in this committee and elsewhere looked very carefully at the needs of the utility industry in this country. We have looked at power growth curves and projections of increases of consumption of electrical energy. We have looked at the questions of safety and the problems that we have with existing reactors wherever they are located.

Would you not agree that a small modular reactor with inherent safety and passive safety features would be the only marketable reactor for the next generation of nuclear power plants?

Secretary Herrington. Mr. Chairman, I do not know that I am qualified to answer that. There are plenty of people that can give you a better answer than I.

Certainly whatever we are doing, we are not successful at it. We need to look at something different. Modular reactors have a great deal of appeal to me, and I think if anything has a chance of success, that may be one that has a good chance of success.

Senator McClure. One of the things we looked at in the needs of the utility industry, completely separate from the question of what kind of nuclear reactors we should have, was how do utility executives react to the projection of power needs.

We have a very steeply rising curve of demand. They can build a 1,000 or 1,500 megawatt plant, and they are overbuilt when it goes on the line, but that overbuilt capacity is used up very quickly as you move up that steep chart of electricity demand. When you have a very flat growth curve, a 1,000 megawatt plant going on line means that they have an overbuilt factor for a long period of years before their system demand absorbs that capacity.

A small reactor, on the other hand, fits that flat growth curve much better, and under the regulatory climate that they have today, as their investment policies are not only questioned but second guessed, they cannot expose themselves to the risk of public utility commission decisions that they should not have overbuilt that much, so they simply do not take the risk, both economic and regulatory. A small reactor reduces that economic risk, reduces that regulatory risk, and makes it possible for them to plan in a more orderly way for the future energy demands of the utility system.

We do not have such a reactor marketable in this country today. And it seems to me we ought to be trying to develop one, not just for the manufacturers, but for the consumers of this country. That is one of the reasons why many of us have been trying to push us in the direction of looking at new reactor designs.

Again, I want to compliment you for the answer that you made a while ago in response to a question I think Senator Johnston asked, or a comment that he made with respect to the review of the NPR and the way in which that might dovetail with the other questions. And again, I do not want to just indicate that the new reactor design drives the NPR or that the NPR drives new reactor design, but there might be a meshing of the two programs in a way that is beneficial to both.

Would you not agree?

Secretary HERRINGTON. I think it is a possibility, and I agree with all the comments you have made, especially the short term implications of a modular reactor. Our budget is sufficient for the research and development, but we do not have money to build a demonstration plant. I think Assistant Secretary Garrish and I have talked about this, and demonstrations are very, very expensive. We have to keep adequate funding, I think, for the research and development, and I think we have that in the budget.

Senator McCLURE. I do want to again urge you to look at the way in which the two programs might relate to each other, not to indicate that one should control the other in any degree.

How much money has the Department requested in Fiscal Year 1989 for SIS?

Secretary HERRINGTON. $101 million, Mr. Chairman.

Senator McCLURE. What are the program plans for the SIS for Fiscal Year 1989?

Secretary HERRINGTON. I think I would have to ask Mr. Wade to detail that, if I could.

Mr. WADE. Well, the plan, Mr. Chairman, is to continue with the development of the engineering demonstration system at the Lawrence Livermore National Labortory, as well as continue with the design of the plant at the Idaho National Enginnering Laboratory, and to proceed with activies related to compliance with the National Environmental Policy Act.

Hearings on the draft Environmental Impact Statement are scheduled in Idaho in late March, and that is a big step. That is one of the major milestones of this year. The technical milestones leading towards the engineering demonstration are next year, in fiscal 1989.

Senator McCLURE. Are there any showstoppers in that program?

Mr. WADE. None that we are aware of at this point.

Senator McCLURE. Either in the development of the technology or the other procedural requirements that you must follow?

Mr. WADE. Not that we are aware of.

Senator McCLURE. Mr. Secretary, that gives me an opportunity to publicly thank you for the response that you have made to requests from this committee from Senator Bumpers and myself that you avoid the overlap of Idaho Wilderness hearings and the SIS hearings in Idaho. Your action in postponing the SIS hearings has met with a lot of favorable response in Idaho, and I want to publicly thank you for that accommodation.

Secretary HERRINGTON. Thank you.

Senator McClure. As you know, I hesitated, apologized for having created a conflict because of the scheduling of the other hearings, and I appreciate very much your willingness to accommodate that.

How much money is designated in Fiscal Year 1989 for the NPR?

Secretary Herrington. $60 million.

Senator McClure. I realize we are in an open hearing and we are getting into an area that is very, very sensitive when we look at materials requirements. But certainly the materials requirements have been reduced, that much is known and can be stated, as a result of the revisions of the defense program, occasioned by the Budget Summit Agreement of last fall, am I not correct?

Secretary Herrington. You are quite correct.

Senator McClure. That as a result of that, the reduction in requirements, you were able to assure the nation that you were not impairing our nation's security by placing the N-Reactor in cold standby.

Secretary Herrington. That is correct.

Senator McClure. That also is based on the expectation that SIS will go forward as programmed.

Secretary Herrington. It is an integral part of our plan.

Senator McClure. It is also based upon the expectation that the development, that the NPR development program will go forward.

Secretary Herrington. That is a critical element of what we are doing.

Senator McClure. You have given to the ERAB panel the responsibility for review of technologies and sites with respect to the NPR strategy, am I correct?

Secretary Herrington. Yes, sir.

Senator McClure. Will the technical information which you use include a full input from all of the relevant parties such as DOD, the Nuclear Weapons Council, the Office of Science and Technology Policy and others?

Secretary Herrington. My feeling is that it will. Certainly we should not make that decision without that kind of input.

Senator McClure. It strikes me as one of the most critical decisions you are going to be faced with this year. There are so many different ramifications that come from it, and I am sure you are aware of it. I just hope that we have as broad a based source of advice and consultation as is possible to construct without making it so unwieldy that you cannot handle it.

Secretary Herrington. I would agree with that.

Senator McClure. I think a statement was made, I believe, by Senator Johnston that the current light water reactor is probably the product of the Navy Propulsion Program. I think that is a fair statement. That is not a critical statement at all. That was the one that drove all of it. We might indeed find ourselves in the future decades as much affected by this decision which you are about to make as we have been by the critical choices directed by Admiral Rickover's office in the Naval Propulsion Program. I think it may be just as fundamental to the direction of the industries over the next decade or two.

Therefore, I think of it as one of the critical choices which you will be called upon to make. It will be a legacy of sorts, and we hope it is a legacy of the best sort.

You and I have had some discussion earlier, and I suspect we will have occasion to have discussion later about the two reactor strategy as laid out in both the DOD organization bill of last year and the appropriations bill of last year, and I want to again state my real concern that that be given a very fair chance to operate. It is something which has the support of both the Appropriations and the Armed Services Committee. Although I think it is possible to construct a different kind of support around a different kind of strategy, it still appeals to me as being the broadest opportunity for the broadest possible support.

Mr. Secretary, I have some other questions, and other members of the committee may also. The record will remain open until close of business on Friday of this week for members of the committee to submit questions in writing to be responded to by you in writing.

Thank you very much.

Secretary HERRINGTON. Thank you very much.

[Whereupon, at 4:35 p.m., the hearing adjourned.]

APPENDIX

RESPONSES TO ADDITIONAL COMMITTEE QUESTIONS

OFFICIAL COMMITTEE FILE
PLEASE RETURN

Department of Energy
Washington, DC 20585

April 12, 1988

SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
RECEIVED
APR 12 1988
WASHINGTON, D.C. 20510

Honorable J. Bennett Johnston
Chairman
Committee on Energy and Natural
  Resources
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

On March, 1, 1988, Secretary John S. Herrington appeared before your committee to discuss the Department's Fiscal Year 1989 proposed budget authorization request.

Following that hearing, you submitted written questions, including questions on behalf of Senator Metzenbaum, Senator Hecht, Senator Weicker, Senator McClure and Senator Domenici for our response to supplement the record. Enclosed are the answers to those questions, which have also been sent to Senator Metzenbaum, Senator Hecht. Senator Hatfield, Senator Weicker, Senator McClure and Senator Domenici.

If you have any questions, please have your staff call Becky Thompson on 586-6718. She will be happy to assist.

Sincerely,

Robert G. Rabben
Assistant General Counsel
  for Legislation

Enclosures

Celebrating the U.S. Constitution Bicentennial — 1787-1987

POST-HEARING QUESTIONS AND ANSWERS

RELATING TO THE

MARCH 1. 1988 HEARING

BEFORE THE

SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES

WITNESS: JOHN S. HERRINGTON

SECRETARY OF ENERGY

76

QUESTIONS FROM SENATOR J. BENNETT JOHNSTON

Naval Petroleum Reserves Divestiture

Question 1: What fill rate would the Administration support for SPR assuming the proposal to sell the Naval Petroleum Reserves is not enacted --the budget book says you would remain committed to "significant fill" of the SPR?

Answer: In the absence of legislation authorizing the sale of the Naval Petroleum Reserves, we propose to fill the Strategic Petroleum Reserve at an annual average rate of 50,000 barrels of oil per day during fiscal year 1989, in line with Congressional action for fiscal year 1988.

Questions From Senator Johnston

Question 2: Would you explain what the purpose of the proposed Defense Petroleum Inventory is and how it would be used? Under what conditions could the Secretary of Defense draw it down?

Answer: The Defense Petroleum Inventory is intended to be a readily accessible, strategically located inventory that the Department of Defense could use in emergency situations, including situations in which the Strategic Petroleum Reserve is not drawn down. Oil from the inventory, which would be located at the Strategic Petroleum Reserve in the heart of the U.S. refining industry, could be drawn down at about 100,000 barrels per day. This is comparable to the current rate of production at Elk Hills. It will not decline in the future as will the rate of production at Elk Hills. Use of the Defense Petroleum Inventory does not require the U.S. Government to interfere with commercial transactions; relying on Elk Hills requires that the Government deprive contractors of their crude oil if the Department of Defense needs the oil supplies. In short, the Defense Petroleum Inventory is a better reserve than the Naval Petroleum Reserve.

The Secretary of Defense could draw down the Defense Petroleum Inventory under any conditions. However, the Department of Defense would have to pay drawdown costs and the costs to replace any oil that was drawn down.

Questions From Senator Johnston

Question 3: Why did you select 10 million barrels as the size of the Defense Petroleum Inventory?

Answer: The Department of Energy, the Department of Defense and the Office of Management and Budget agreed that 10 million barrels was a reasonable size for a Defense Petroleum Reserve Inventory. This equates to drawing down 100,000 barrels per day for 100 days or roughly 330,000 barrels per day for one month. An inventory of this size will permit the Department of Defense to cope with short supply emergencies and to bridge the early stages of larger energy emergencies until other measures--such as drawing down the Strategic Petroleum Reserve--can be taken.

Questions From Senator Johnston

Question 4: Would you explain how your proposal to sell Naval Petroleum Reserve would work? Looking at your proposed legislation we see:

a) The proceeds of the sale would go to Treasury, not to the Strategic Petroleum Reserve Account, creating a reduction in the fiscal year 1989 deficit of about $3.2 billion, is that right? That's good for your administration!

b) But under your proposed legislation, funds equal to these proceeds would be taken from the Treasury and placed in the SPR account to be spent, subject to appropriation, for SPR in the years after fiscal year 1989 --- after the Administration leaves office. So spending the funds for SPR oil purchases would still show up on the deficit just as it does now, is that right? So how does your proposal help finance the SPR? We are still faced with the same appropriations problem, aren't we?

Answer: We view the sale of the Naval Petroleum Reserves as a sound strategic move to change the composition of our energy security assets while also recognizing the deficit concern. We propose exchanging operating oil fields with depleting resources for readily accessible oil in a modern, strategically located reserve. Increasing the oil in the Strategic Petroleum Reserve more rapidly and providing for a Defense Petroleum Inventory will serve the Nation much better in an emergency, and divestiture will reallocate responsibilities between the public and private sectors in a more appropriate manner.

The financial approach proposed by the legislation for administering this policy involves depositing divestiture sales proceeds in the Treasury and crediting the same amount to the SPR Petroleum Account. These funds may be used to defray sales costs, to purchase oil for the Strategic Petroleum Reserve, and to develop the initial 10 million barrels of the Defense Petroleum Inventory. Except for sales costs, obligation of these funds would be subject to appropriation.

However, we are open to other approaches such as more direct and explicit deposit of the sales proceeds for SPR and DPI and to credit these revenues directly to the energy function. To provide the funds for implementing this policy, the Administration is proposing a multi-year advance appropriation for the 10 million barrel Defense Petroleum Inventory and for the higher SPR fill rate. This would provide an assured source of funding for the SPR.

The issue of future SPR funding would be settled this year if Congress supports the NPR sale. We are open to working with you on achieving this financing and appropriations for this proposal that best assures achievement of the programmatic objectives.

Questions From Senator Johnston

Question 5:	What is the logical connection between how fast the SPR SPR should be filled and the question of whether the U.S. Government or a private oil company should own the Naval Petroleum Reserves?
Answer:	The Administration believes that emergency oil stockpiling is a public sector function and that the existing Strategic Petroleum Reserve inventory should be expanded to 750 million barrels. We also believe that Elk Hills and Teapot Dome are assets not required for public policy purposes and that these fields would be better managed in the private sector. Naval Petroleum Reserves divestiture lets us sell assets we do not need and redirect investment capital to acquiring assets we do need.

J BENNETT JOHNSTON LOUISIANA CHAIRMAN

DALE BUMPERS ARKANSAS
WENDELL H FORD KENTUCKY
HOWARD M METZENBAUM OHIO
JOHN MELCHER MONTANA
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DARYL H OWEN STAFF DIRECTOR
D MICHAEL HARVEY CHIEF COUNSEL
FRANK M CUSHING STAFF DIRECTOR FOR THE MINORITY
GARY G ELLSWORTH CHIEF COUNSEL FOR THE MINORITY

United States Senate

COMMITTEE ON
ENERGY AND NATURAL RESOURCES
WASHINGTON, DC 20510-6150

March 4, 1988

Honorable John S. Herrington
Secretary of Energy
Department of Energy
Room 7 A 257
1000 Independence Street, SW
Washington, D. C. 20285

Dear Mr. Secretary:

Enclosed are additional questions submitted by Members of the Committee on Energy and Natural Resources as follow-up to the Committee's March 1 hearing concerning the President's proposed budget for the Department of the Interior for FY 1989.

The Committee will expect to receive your responses by the close of business on Friday, March 11. Please send them to 364 Dirksen Senate Office Building, Attention: Mike Harvey.

I will appreciate your promptness in responding to these questions. Thank you.

Sincerely,

J. Bennett Johnston
Chairman

JBJ:VLB

From Senator Johnston

SPR

Questions for Hearing with Secretary Herrington

1) What fill rate would the Administration support for SPR assuming the proposal to sell the Naval Petroleum Reserves is not enacted --- the budget book says you would remain committed to "significant fill" of the SPR?

2) Would you explain what the purpose of the proposed Defense Petroleum Inventory is and how it would be used? Under what conditions could the Secretary of Defense draw it down?

3) Why did you select 10 million barrels as the size of the Defense Petroleum Inventory?

4) Would you explain how your proposal to sell the Naval Petroleum Reserve would work? Looking at your proposed legislation we see:

a) The proceeds of the sale would go to the Treasury, not to the SPR Account, creating a reduction in the FY 1989 deficit of about $3.2 billion, is that right? That's good for your Administration!

b) But under your proposed legislation, funds equal to these proceeds would be taken from the Treasury and placed in the SPR account to be spent, subject to appropriation, for SPR in the years after FY 1989 --- after the Administration leaves office. So spending the funds for SPR oil purchases would still show up on the deficit just as it does now, is that right? So how does your proposal help finance the SPR? We are still faced with the same appropriations problem, are we not?

5) What is the logical connection between how fast the SPR should be filled and the question of whether the U.S. Government or a private oil company should own the Naval Petroleum Reserves?

Department of Energy
Washington, DC 20585

April 12, 1988

Honorable Howard M. Metzenbaum
United States Senate
Washington, D.C. 20510

Dear Senator Metzenbaum:

On March 1, 1988, Secretary John S. Herrington, appeared before the Committee on Energy and Natural Resources to discuss the Department's Fiscal Year 1989 proposed budget authorization request.

Following that hearing, you submitted questions through Chairman Johnston, for our response to supplement the record. Enclosed are the answers to those questions, which also have been sent to the committee staff.

If you have any questions, please have your staff call Becky Thompson on 586-4277. She will be happy to assist.

Sincerely,

Robert G. Rabben
Assistant General Counsel
for Legislation

Enclosures

Celebrating the U.S. Constitution Bicentennial — 1787-1987

QUESTIONS FROM SENATOR METZENBAUM

PROGRAM FUNDING

Question 1:	Your budget states that no funds are provided for the state energy conservation grant programs because oil overcharge funds are available for those purposes. As you know, states are not required to use their oil overcharge funds to continue their conservation programs. Furthermore, Congress agreed to a minimum, or 'floor' funding level of $200 million for the grant programs in the FY 1986 Reconciliation Act. What is the Department's rationale for opposing such minimum funding which is designed to preserve the conservation program infrastructure that has been developed over the past 15 years?
Answer:	More than $2 billion of the $3.5 billion received by the States since 1983 must be used for the five Federal energy programs, including the four conservation programs. If a State chooses not to fund one or another conservation program, then it must be that it has judged that there are better ways to spend the money. States are the best judges of local needs. In fact, on a national basis, all of the conservation programs are receiving substantial funding and could not spend more money if they had it. To date States have allocated less than half of their overcharge funds to specific conservation programs and have actually spent very little of what has been allocated.

QUESTIONS FROM SENATOR METZENBAUM

OIL OVERCHARGE FUNDS

Question 2: Would you please provide for the record a listing, for each state, of the allocation of oil overcharge funds to each of the four state and local assistance programs.

Answer: Attached are lists, by state and program, of Exxon and Stripper Well overcharge fund allocations.

MAR 7 1988

EXXON OIL OVERCHARGE FUNDS
BY SUPPORT OFFICE AND STATE
STATE ENERGY CONSERVATION PROGRAMS

SUPPORT OFFICE	STATE	UNDER REVIEW	APPROVED	TOTAL PROPOSED
ATLANTA	AL	0	5,177,000	5,177,000
ATLANTA	FL	6,000,000	10,637,000	16,637,000
ATLANTA	GA	0	1,505,000	1,505,000
ATLANTA	MS	0	8,319,000	8,319,000
ATLANTA	NC	0	2,807,000	2,807,000
ATLANTA	SC	0	200,000	200,000
ATLANTA	TN	0	3,076,000	3,076,000
ATLANTA	VI	0	317,000	317,000
BOSTON	CT	0	767,500	767,500
BOSTON	MA	0	9,000,000	9,000,000
BOSTON	ME	0	6,700,000	6,700,000
BOSTON	NH	0	3,711,768	3,711,768
BOSTON	RI	0	2,168,913	2,168,913
BOSTON	VT	0	1,950,000	1,950,000
CHICAGO	IL	0	6,346,530	6,346,530
CHICAGO	IN	0	8,576,452	8,576,452
CHICAGO	MI	0	12,643,300	12,643,300
CHICAGO	MN	0	16,902,668	16,902,668
CHICAGO	OH	0	5,390,706	5,390,706
DALLAS	AR	0	3,130,501	3,130,501
DALLAS	LA	9,847,458	0	9,847,458
DALLAS	NM	0	2,447,270	2,447,270
DALLAS	OK	2,893,780	1,000,000	3,893,780
DALLAS	TX	64,206,000	0	64,206,000
DENVER	CO	0	17,300,000	17,300,000
DENVER	ID	0	3,500,000	3,500,000
DENVER	MT	0	2,705,300	2,705,300
DENVER	ND	0	701,000	701,000
DENVER	SD	0	8,200,047	8,200,047
DENVER	UT	300,000	2,000,000	2,300,000
DENVER	WY	4,000,000	0	4,000,000
KANSAS CITY	IA	0	10,706,243	10,706,243
KANSAS CITY	KS	0	1,090,645	1,090,645
KANSAS CITY	MO	0	7,868,966	7,868,966
KANSAS CITY	NE	0	2,240,142	2,240,142
NEW YORK	NY	0	67,649,815	67,649,815
PHILADELPHIA	DC	0	576,482	576,482
PHILADELPHIA	DE	0	53,751	53,751
PHILADELPHIA	MD	0	935,178	935,178
PHILADELPHIA	PA	0	6,025,178	6,025,178
PHILADELPHIA	VA	0	3,998,000	3,998,000
PHILADELPHIA	WV	0	570,260	570,260
RICHLAND	AK	0	202,919	202,919
RICHLAND	OR	0	3,867,714	3,867,714
RICHLAND	WA	2,740,726	4,371,062	7,111,788
SAN FRANCISCO	AS	0	150,000	150,000
SAN FRANCISCO	AZ	0	16,149,279	16,149,279
SAN FRANCISCO	CA	1,509,000	23,838,596	25,347,596
SAN FRANCISCO	CM	0	150,000	150,000
SAN FRANCISCO	GU	0	164,300	164,300
SAN FRANCISCO	HI	0	2,914,495	2,914,495
SAN FRANCISCO	NV	0	383,135	383,135
		91,496,964	301,086,115	392,583,079

MAR 7 1989

EXXON OIL OVERCHARGE FUNDS
BY SUPPORT OFFICE AND STATE
ENERGY EXTENSION SERVICE

SUPPORT OFFICE	STATE	UNDER REVIEW	APPROVED	TOTAL PROPOSED
ATLANTA	AL	0	1,111,000	1,111,000
ATLANTA	GA	0	2,425,000	2,425,000
ATLANTA	MS	0	414,000	414,000
ATLANTA	NC	0	847,000	847,000
ATLANTA	VI	0	230,000	230,000
BOSTON	CT	0	3,000,000	3,000,000
BOSTON	ME	0	250,000	250,000
BOSTON	NH	0	2,845,972	2,845,972
BOSTON	RI	234,658	799,458	1,034,116
CHICAGO	IN	0	13,000,000	13,000,000
CHICAGO	MN	0	1,268,038	1,268,038
CHICAGO	OH	0	1,869,389	1,869,389
DALLAS	NM	0	125,000	125,000
DALLAS	OK	875,000	0	875,000
DALLAS	TX	875,000	0	875,000
DENVER	SD	0	232,000	232,000
KANSAS CITY	IA	0	4,008,756	4,008,756
KANSAS CITY	KS	0	10,832	10,832
KANSAS CITY	MO	0	547,983	547,983
KANSAS CITY	NE	0	1,235,188	1,235,188
NEW YORK	NY	0	11,838,090	11,838,090
PHILADELPHIA	DC	0	200,000	200,000
PHILADELPHIA	DE	0	19,253	19,253
PHILADELPHIA	MD	0	2,113,596	2,113,596
PHILADELPHIA	PA	0	658,933	658,933
PHILADELPHIA	VA	0	85,000	85,000
PHILADELPHIA	WV	0	125,000	125,000
RICHLAND	AK	0	447,081	447,081
RICHLAND	OR	0	81,600	81,600
RICHLAND	WA	0	223,679	223,679
SAN FRANCISCO	AZ	0	886,000	886,000
SAN FRANCISCO	CA	0	4,897,499	4,897,499
SAN FRANCISCO	HI	0	699,226	699,226
SAN FRANCISCO	NV	111,700	354,177	465,877
		2,096,358	56,848,750	58,945,108

MAR 7 1988

EXXON OIL OVERCHARGE FUNDS
BY SUPPORT OFFICE AND STATE
INSTITUTIONAL CONSERVATION PROGRAMS

SUPPORT OFFICE	STATE	UNDER REVIEW	APPROVED	TOTAL PROPOSED
ATLANTA	AL	0	7,000,000	7,000,000
ATLANTA	FL	0	19,881,000	19,881,000
ATLANTA	GA	0	14,403,000	14,403,000
ATLANTA	MS	0	10,904,000	10,904,000
ATLANTA	SC	0	595,000	595,000
ATLANTA	TN	0	6,918,000	6,918,000
BOSTON	CT	0	1,000,000	1,000,000
BOSTON	ME	0	1,000,000	1,000,000
BOSTON	NH	500,000	55,512	555,512
BOSTON	RI	0	1,000,000	1,000,000
CHICAGO	OH	0	1,648,039	1,648,039
DALLAS	AR	2,242,578	6,227,403	8,469,981
DALLAS	LA	2,810,963	0	2,810,963
DALLAS	NM	0	590,233	590,233
DALLAS	OK	1,000,000	0	1,000,000
DENVER	ID	0	850,123	850,123
DENVER	MT	200,000	0	200,000
DENVER	ND	0	664,855	664,855
DENVER	SD	0	1,000,000	1,000,000
DENVER	UT	0	749,484	749,484
KANSAS CITY	KS	0	1,500,000	1,500,000
KANSAS CITY	MO	0	7,500,000	7,500,000
NEW YORK	NJ	0	14,928,584	14,928,584
NEW YORK	NY	0	13,548,680	13,548,680
PHILADELPHIA	DC	0	400,000	400,000
PHILADELPHIA	DE	0	1,916,667	1,916,667
PHILADELPHIA	MD	0	3,000,000	3,000,000
PHILADELPHIA	PA	0	5,662,482	5,662,482
PHILADELPHIA	VA	0	500,000	500,000
PHILADELPHIA	WV	0	155,890	155,890
RICHLAND	AK	0	900,000	900,000
SAN FRANCISCO	AZ	0	303,745	303,745
SAN FRANCISCO	HI	0	4,250,000	4,250,000
SAN FRANCISCO	NV	0	68,963	68,963
		6,753,541	129,121,660	135,875,201

MAR 7 1988

EXXON OIL OVERCHARGE FUNDS
BY SUPPORT OFFICE AND STATE
WEATHERIZATION ASSISTANCE PROGRAMS

SUPPORT OFFICE	STATE	UNDER REVIEW	APPROVED	TOTAL PROPOSED
ATLANTA	AL	385,000	1,900,000	2,285,000
ATLANTA	FL	0	153,000	153,000
ATLANTA	GA	0	9,774,000	9,774,000
ATLANTA	KY	0	2,518,000	2,518,000
ATLANTA	MS	0	3,500,000	3,500,000
ATLANTA	NC	0	4,200,000	4,200,000
ATLANTA	TN	0	15,000,000	15,000,000
BOSTON	MA	0	13,591,536	13,591,536
BOSTON	ME	0	3,800,000	3,800,000
BOSTON	NH	0	580,000	580,000
BOSTON	RI	0	446,700	446,700
BOSTON	VT	0	800,000	800,000
CHICAGO	IL	0	21,500,000	21,500,000
CHICAGO	MI	0	12,988,453	12,988,453
CHICAGO	MN	0	5,500,000	5,500,000
CHICAGO	OH	0	18,959,810	18,959,810
CHICAGO	WI	0	4,500,000	4,500,000
DALLAS	AR	0	2,100,000	2,100,000
DALLAS	LA	4,000,000	2,000,000	6,000,000
DALLAS	NM	0	2,985,625	2,985,625
DALLAS	OK	0	2,976,963	2,976,963
DALLAS	TX	0	1,750,000	1,750,000
DENVER	CO	0	4,147,000	4,147,000
DENVER	ID	0	2,340,000	2,340,000
DENVER	MT	0	3,200,000	3,200,000
DENVER	ND	0	1,813,000	1,813,000
DENVER	SD	0	1,000,000	1,000,000
DENVER	UT	0	1,500,000	1,500,000
DENVER	WY	0	2,000,000	2,000,000
KANSAS CITY	IA	0	3,371,189	3,371,189
KANSAS CITY	KS	0	346,858	346,858
KANSAS CITY	MO	0	8,800,000	8,800,000
NEW YORK	NY	0	21,806,620	21,806,620
PHILADELPHIA	DC	0	900,000	900,000
PHILADELPHIA	DE	1,000,000	1,000,000	2,000,000
PHILADELPHIA	MD	0	13,688,677	13,688,677
PHILADELPHIA	VA	0	4,900,000	4,900,000
RICHLAND	AK	0	2,000,000	2,000,000
RICHLAND	OR	0	11,263,271	11,263,271
RICHLAND	WA	0	4,500,533	4,500,533
SAN FRANCISCO	AZ	0	1,000,000	1,000,000
SAN FRANCISCO	HI	0	800,000	800,000
SAN FRANCISCO	NV	0	1,000,032	1,000,032
		5,385,000	222,901,267	228,286,267

QUESTIONS FOR SECRETARY HERRINGTON
BY SENATOR HOWARD M. METZENBAUM

Question 3: In a July 30, 1987, hearing before this committee on S. 1382, the Department testified that it was conducting a review of the concept of authorizing agencies to retain a portion of the savings which resulted from their energy conservation efforts. It was stated that the results of this review would be available in February, 1988. Has the review been completed? If not, when will it be available?

Answer: Certain agencies such as DOD are looking at their ability to establish an internal incentives program within their own specific agency authorities. Other Federal agencies may be able to develop incentives programs where appropriations provisions do not preclude it. The Department has held meetings with OMB and is currently reviewing potential actions on the part of the Federal government that could be taken to provide incentives for Federal facility managers to implement energy conservation activities. We have examined a number of ways to provide an incentives system including those proposed in S. 1382 and H.R. 4065, which use existing appropriation authorities. We have found that providing a continuing funding authority for conservation projects from one year to the next is not workable under existing appropriation laws. Thus, we are now focusing on the mechanisms that were being considered for funding of the OMB Shared Savings Program to determine if such a mechanism would provide for an appropriate incentive system for Federal facility managers. We anticipate that our review will be completed during April 1988.

Department of Energy
Washington, DC 20585

April 12, 1988

Honorable James A. McClure
United States Senate
Washington, D.C. 20510

Dear Senator McClure:

On March 1, 1988, Secretary John S. Herrington, appeared before the Committee on Energy and Natural Resources to discuss the Department's Fiscal Year 1989 proposed budget authorization request.

Following that hearing, you submitted questions through Chairman Johnston, for our response to supplement the record. Enclosed are the answers to those questions, which also have been sent to the committee staff.

If you have any questions, please have your staff call Becky Thompson on 586-4277. She will be happy to assist.

Sincerely,

Robert G. Rabben
Assistant General Counsel
for Legislation

Enclosures

Celebrating the U.S. Constitution Bicentennial — 1787-1987

QUESTIONS SUBMITTED BY SENATOR JAMES A. McCLURE

FY 1988 BUDGET ASSUMPTIONS

QUESTION 1: Would you provide for the record a fiscal year 1988 baseline table indicating for each appropriations account --

a. the budget authority and estimated outlays as appropriated by the Congress;

b. any proposed rescissions or deferrals; and

c. any anticipated supplemental appropriations.

ANSWER: An FY 1988 Department of Energy Base Table follows, which indicates for each appropriations account the budget authority as appropriated by Congress. Estimated outlays have been annotated onto the Base Table for each appropriations account. The Department currently plans no rescissions or deferrals during FY 1988. No supplemental appropriations are anticipated for FY 1988.

PROPOSALS FOR USE OF STRIPPER WELL
OVERCHARGE FUNDS BY STATE AND PROGRAM
Through March 21, 1988 *

STATE	TOTAL DISTRIBUTED TO STATES	EES	ICP	SECP	WAP	LIHEAP	PROGRAMMATIC TOTAL
ALASKA	3,376,096	0	0	0	0	0	0
ALABAMA	14,182,464	102,900	0	621,690	0	2,270,000	2,994,590
ARKANSAS	11,761,397	0	0	613,891	1,292,855	410,000	2,316,746
AMERICAN SAMOA	164,600	0	0	0	0	0	0
ARIZONA	9,400,432	800,000	0	0	0	1,075,000	1,875,000
CALIFORNIA *	84,640,250	0	0	0	0	0	0
COLORADO	9,937,656	0	0	2,217,630	0	0	2,217,630
CONNECTICUT	15,695,864	0	1,000,000	2,774,919	100,000	3,118,503	6,993,422
DISTRICT OF COLUMBIA	2,207,707	0	0	787,064	409,984	447,333	1,644,381
DELAWARE	6,300,440	0	0	1,573,750	2,500,000	0	4,073,750
FLORIDA	62,702,387	0	0	0	3,000,000	0	3,000,000
GEORGIA	29,301,651	4,514,000	1,400,000	10,662,000	2,215,000	0	18,791,000
GUAM	1,362,033	63,099	0	0	0	0	63,099
HAWAII	6,250,200	0	0	0	0	0	0
IOWA	12,042,371	15,270,000	0	730,000	0	5,400,000	21,400,000
IDAHO	3,773,217	150,000	0	2,425,000	0	160,000	2,735,000
ILLINOIS	62,451,197	0	30,000,000	0	0	11,300,000	41,300,000
INDIANA	22,765,752	0	0	0	2,282,693	0	2,282,693
KANSAS *	10,360,863	0	0	0	0	0	0
KENTUCKY *	11,097,337	0	0	0	0	10,000,000	10,000,000
LOUISIANA *	21,903,893	0	0	0	0	0	0
MASSACHUSETTS	31,639,052	0	2,000,000	11,000,000	5,000,000	10,000,000	28,000,000
MARYLAND	16,340,295	4,700,000	0	0	3,000,000	1,019,000	8,719,000
MAINE	6,794,309	400,000	300,000	455,000	1,325,000	200,000	2,680,000
MICHIGAN	31,991,161	0	0	1,500,000	3,717,257	7,200,000	12,417,257
MINNESOTA	16,038,100	7,297,500	0	0	8,758,513	0	16,056,013
MISSOURI *	18,240,708	0	0	0	0	0	0
MARIANA ISLANDS *	85,144	0	0	0	0	0	0
MISSISSIPPI	12,690,040	0	5,070,000	1,663,227	1,250,000	1,000,000	8,983,227
MONTANA	4,183,270	0	0	338,000	850,000	0	1,188,000
NORTH CAROLINA *	29,744,129	0	0	0	0	0	0
NORTH DAKOTA	3,387,396	0	0	2,723,000	0	0	2,723,000
NEBRASKA	6,815,347	0	0	0	600,000	0	600,000
NEW HAMPSHIRE	4,307,326	960,000	0	0	2,100,000	0	3,060,000
NEW JERSEY	34,117,083	250,000	0	0	0	0	250,000
NEW MEXICO	6,094,303	0	200,012	30,000	90,231	100,553	420,796
NEVADA	3,703,676	0	0	0	0	405,000	405,000
NEW YORK	71,367,973	26,300,000	8,000,000	3,250,000	0	7,369,440	45,319,440
OHIO	34,329,701	0	0	12,027,457	3,400,000	2,400,000	17,827,457
OKLAHOMA	11,414,882	4,536,000	0	375,000	1,000,000	600,000	6,511,000
OREGON	9,161,413	0	0	0	597,000	0	597,000
PENNSYLVANIA	43,032,811	250,000	0	1,415,000	0	0	1,665,000
PUERTO RICO	8,004,750	0	0	0	0	0	0
RHODE ISLAND	3,044,466	150,000	133,000	770,000	0	2,200,000	3,263,000
SOUTH CAROLINA	11,018,790	0	0	0	0	0	0
SOUTH DAKOTA	3,304,795	0	0	338,693	0	0	338,693
TENNESSEE	14,954,425	0	0	2,000,000	0	0	0
TEXAS	68,186,430	0	0	5,000,000	0	7,351,000	12,351,000
UTAH	5,452,332	2,000,000	0	2,850,000	0	0	4,850,000
VIRGINIA *	23,729,076	0	0	0	0	0	0
VIRGIN ISLANDS	4,275,373	0	0	0	0	0	0
VERMONT	2,212,046	1,334,201	0	0	0	0	1,334,201

WASHINGTON	14,114,209	0	0	6,768,329	605,598	1,898,482	9,272,409
WISCONSIN	16,261,730	5,000,000	1,155,059	2,400,000	2,000,000	3,101,000	13,656,059
WEST VIRGINIA *	5,523,651	0	0	0	0	0	0
WYOMING	3,768,913	0	0	0	0	0	0

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* States marked with an asterisk have proposed energy-related projects to be funded with Stripper Well funds, but they do not fall under the five programs designated above.

CONGRESSIONAL BASE TABLE REPORT

DEPARTMENT OF ENERGY
FY 1988 BASE TABLE BY APPROPRIATION
INTERIOR
(DOLLARS IN THOUSANDS)

AS OF DATE: 12/31/87

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY	SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	CURRENT PROGRAMMING		OBLIGATIONAL AUTHORITY	ESTIMATED OUTLAYS
					AUTHORITY	UNOBLIGATED CARRYOVER		
FOSSIL ENERGY RESEARCH AND DEVELOPMENT—0910213								
COAL								
LIQUEFACTION								
ADVANCED RESEARCH............	$ 5,690	$ 442 A,C	$	$	$ 6,132	$ 55	$ 6,187	
DIRECT LIQUEFACTION...........	13,190	234 A,C			13,424	140	13,564	
INDIRECT LIQUEFACTION........	6,330	253 A			6,583	31	6,614	
SUPPORT STUDIES AND ENGINEERING EVALUATIONS.......	990				990	297	1,287	
DEMONSTRATION PLANTS..........						78	78	
DIRECT HYDROGENATION..........						755	755	
SOLVENT EXTRACTION............						14	14	
ALTERNATE FUELS FEASIBILITY STUDY........................								
SUBTOTAL, LIQUEFACTION.......	26,200	929			27,129	1,370	28,499	
SURFACE COAL GASIFICATION								
ADVANCED RESEARCH............	2,740	-42 A,C			2,698	29	2,727	
SYSTEMS FOR POWER PRODUCTION..	11,230	-5,654 A,B			5,576	8,846	14,422	
SYSTEMS FOR INDUSTRIAL FUEL GAS PRODUCTION...............	1,400	-31 A			1,369		1,369	
SYSTEMS FOR SYNTHESIS GAS PRODUCTION..................	2,005	-652 A,B,C			1,353	633	1,986	
SYSTEM FOR COPRODUCTS PRODUCTION..................	5,300	-8 A			5,292		5,292	
GASIFICATION DEMONSTRATION PLANTS.......................						50	50	
GREAT PLAINS GASIFICATION PROJECT......................	500				500	119	619	
SUBTOTAL, SURFACE COAL GASIFICATION.................	23,175	-6,387			16,788	9,677	26,465	

CURRENT CHANGES
A/REFLECTS DISTRIBUTION OF FUNDING FOR EMPLOYMENT FLOORS.
B/REFLECTS USE OF UNOBLIGATED BALANCES.
C/REFLECTS DISTRIBUTION OF GENERAL REDUCTION.

CONGRESSIONAL BASE TABLE REPORT

DEPARTMENT OF ENERGY
FY 1988 BASE TABLE BY APPROPRIATION
INTERIOR
(DOLLARS IN THOUSANDS)

AS OF DATE: 12/31/87

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY		SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	AUTHORITY	CURRENT PROGRAMMING UNOBLIGATED CARRYOVER	OBLIGATIONAL AUTHORITY	ESTIMATED OUTLAYS
FOSSIL ENERGY RESEARCH AND DEVELOPMENT—8910213									
UNDERGROUND COAL GASIFICATION...	$ 2,825	$ -48	B	$	$	$ 2,777	$ 73	$ 2,850	
ADVANCED RESEARCH AND TECHNOLOGY DEVELOPMENT..........	31,960	-83	A,B			31,877	1,577	33,454	
HEAT ENGINES.....................	18,050	-105	A,B			17,945	1,051	18,996	
COAL TECHNOLOGY AND COAL PREPARATION									
FLUE GAS CLEANUP...............	14,430	107	A,B			14,537	1,708	16,245	
GAS STREAM CLEANUP............	9,705	163	A,B			9,868	7,073	16,941	
WASTE MANAGEMENT TECHNOLOGY...	1,383	5	A,B			1,388	51	1,439	
COAL PREPARATION AND ANALYSIS.	15,695	90	A,B			15,785	445	16,230	
SUBTOTAL, COAL TECHNOLOGY AND COAL PREPARATION.............	41,213	365				41,578	9,277	50,855	
COMBUSTION SYSTEMS									
ATMOSPHERIC FLUIDIZED BED.....	2,500	-77	A,B			2,423	239	2,662	
PRESSURIZED FLUIDIZED BED.....	7,326	-124	A,B			7,202	76	7,278	
ADVANCED COMBUSTION TECHNOLOGY....................	3,474	12	A			3,486	40	3,526	
ALTERNATE FUEL UTILIZATION....	3,682	23	A,B			3,705	128	3,833	
EPA LIMB DEMONSTRATION.......	5,000					5,000		5,000	
COMBUSTION SYSTEM DEMONSTRATION PLANTS..........									
SUBTOTAL, COMBUSTION SYSTEMS..	21,982	-166				21,816	483	22,299	
FUEL CELLS									
ADVANCED CONCEPTS.............	8,353					8,353	70	8,423	
MOLTEN CARBONATE..............	11,100					11,100	5,238	16,338	
PHOSPHORIC ACID...............	13,200					13,200	11,021	24,221	
4.8 MW ELECTRIC UTILITY POWER PLANT DEVELOPMENT.............									
SUBTOTAL, FUEL CELLS..........	32,653					32,653	16,329	48,982	

CURRENT CHANGES
A/REFLECTS DISTRIBUTION OF FUNDING FOR EMPLOYMENT FLOORS.
B/REFLECTS DISTRIBUTION OF GENERAL REDUCTION.

CONGRESSIONAL BASE TABLE REPORT

DEPARTMENT OF ENERGY
FY 1988 BASE TABLE BY APPROPRIATION
INTERIOR
(DOLLARS IN THOUSANDS)

AS OF DATE: 12/31/87 ·PAGE 4

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY	SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	CURRENT PROGRAMMING AUTHORITY	UNOBLIGATED CARRYOVER	OBLIGATIONAL AUTHORITY	ESTIMATED OUTLAYS
FOSSIL ENERGY RESEARCH AND DEVELOPMENT--0910213								
POLICY AND MANAGEMENT								
PROGRAM DIRECTION...............	$ 13,765	$ 272 A,B	$	$	$ 14,037	$ 366	$ 14,403	
ENERGY TECHNOLOGY CENTER PROGRAM DIRECTION...............	42,096	5,715 A,B			47,811	2,416	50,227	
FEDERAL INSPECTOR FOR THE ALASKA PIPELINE..................	230				230	100	330	
CAPITAL EQUIPMENT...............	480				480	440	920	
CONSTRUCTION								
GP-F100 GENERAL PLANT PROJECTS........	2,250				2,250	976	3,226	
88-F101 METC ADMINISTRATIVE WING......	4,000				4,000		4,000	
FACILITIES								
88-F100 ENERGY CENTER, UNIVERSITY OF OKLAHOMA.................	5,500				5,500		5,500	
88-F102 ENERGY CENTER, WEST VIRGINIA UNIVERSITY.........	6,000				6,000		6,000	
SUBTOTAL, FACILITIES........	11,500				11,500		11,500	

CURRENT CHANGES
A/REFLECTS DISTRIBUTION OF FUNDING FOR EMPLOYMENT FLOORS.
B/REFLECTS DISTRIBUTION OF FERS REESTIMATE.

DEPARTMENT OF ENERGY
FY 1988 BASE TABLE BY APPROPRIATION
INTERIOR
(DOLLARS IN THOUSANDS)

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY	SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	AUTHORITY	CURRENT PROGRAMMING UNOBLIGATED CARRYOVER	OBLIGATIONAL AUTHORITY	ESTIMATED OUTLAYS
FOSSIL ENERGY RESEARCH AND DEVELOPMENT--0910213								
UNOBLIGATED BALANCE APPLIED TO PRIOR YEAR PROJECTS........	$	$	$	$	$	$ 10	$ 10	
SUBTOTAL, CONSTRUCTION........	17,750				17,750	986	18,736	
TOTAL, POLICY AND MANAGEMENT....	74,321	5,987			80,308	4,308	84,616	

DEPARTMENT OF ENERGY
FY 1988 BASE TABLE BY APPROPRIATION
INTERIOR
(DOLLARS IN THOUSANDS)

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY	SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	CURRENT PROGRAMMING		OBLIGATIONAL AUTHORITY	ESTIMATED OUTLAYS
					AUTHORITY	UNOBLIGATED CARRYOVER		
FOSSIL ENERGY CONSTRUCTION—0910214								
UNOBLIGATED BALANCE APPLIED TO PRIOR YEAR PROJECTS...............	$	$	$	$	$	$ 610	$ 610	
TOTAL, FOSSIL ENERGY CONSTRUCTION—0910214.............	$	$	$	$	$	$ 610	$ 610	

DEPARTMENT OF ENERGY
FY 1988 BASE TABLE BY APPROPRIATION
INTERIOR
(DOLLARS IN THOUSANDS)

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY	SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	AUTHORITY	CURRENT PROGRAMMING UNOBLIGATED CARRYOVER	OBLIGATIONAL AUTHORITY	ESTIMATED OUTLAYS
ENERGY CONSERVATION—89X0215								
BUILDINGS AND COMMUNITY SYSTEMS								
BUILDING SYSTEMS................	$ 10,500	$	$	$	$ 10,500	$ 170	$ 10,670	
COMMUNITY SYSTEMS................	3,700				3,700	542	4,242	
URBAN WASTE......................						33	33	
TECHNOLOGY AND CONSUMER PRODUCTS......................	10,800				10,800	228	11,028	
ANALYSIS AND TECHNOLOGY TRANSFER......................	3,000				3,000	275	3,275	
RESIDENTIAL CONSERVATION SERVICE......................						1	1	
APPLIANCE STANDARDS.............	1,800				1,800	56	1,856	
FEDERAL ENERGY MANAGEMENT PROGRAM......................	1,000				1,000	72	1,072	
PROGRAM DIRECTION................	3,096	-6 B			3,090	553	3,643	
SMALL BUSINESS...................						1	1	
EMERGENCY BUILDING TEMPERATURE RESTRICTION......................						2	2	
CAPITAL EQUIPMENT................	750				750		750	
TOTAL, BUILDINGS AND COMMUNITY SYSTEMS......................	34,646	-6			34,640	1,933	36,573	
INDUSTRIAL								
WASTE ENERGY REDUCTION..........	10,924				10,924	2,935	13,859	
PROCESS EFFICIENCY..............	13,600	-2,000 A			11,600	9,992	21,592	
COGENERATION....................	4,200				4,200	1,695	5,895	
IMPLEMENTATION AND DEPLOYMENT...	2,300				2,300	412	2,712	
PROGRAM DIRECTION...............	2,070	-25 B			2,045	881	2,926	
CAPITAL EQUIPMENT...............						10	10	
TOTAL, INDUSTRIAL...............	33,094	-2,025			31,069	15,925	46,994	

CURRENT CHANGES
A/REFLECTS USE OF UNOBLIGATED BALANCES.
B/REFLECTS DISTRIBUTION OF FERS REESTIMATE.

DEPARTMENT OF ENERGY
FY 1988 BASE TABLE BY APPROPRIATION
INTERIOR
(DOLLARS IN THOUSANDS)

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY	SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	AUTHORITY	CURRENT PROGRAMMING UNOBLIGATED CARRYOVER	OBLIGATIONAL AUTHORITY	ESTIMATED OUTLAYS
ENERGY CONSERVATION—89X0215								
TRANSPORTATION								
VEHICLE PROPULSION R&D..........	$ 17.500	$	$	$	$ 17.500	$ 198	$ 17.698	
ALTERNATIVE FUELS UTILIZATION...	1.200				1.200	76	1.276	
ELECTRIC/HYBRID VEHICLE PROGRAM.	14.100				14.100	14	14.114	
TRANSPORTATION SYSTEM UTILIZATION......................	1.100				1.100	173	1.273	
PROGRAM DIRECTION...............	2.195	-17 A			2.178	605	2.783	
CAPITAL EQUIPMENT...............	250				250	102	352	
ADVANCED MATERIALS DEVELOPMENT..	13.500				13.500	177	13.677	
HIGH TEMPERATURE MATERIALS LABORATORY......................	2.000				2.000		2.000	
TOTAL, TRANSPORTATION..........	51.845	-17			51.828	1.345	53.173	

CURRENT CHANGES
A/REFLECTS DISTRIBUTION OF FERS REESTIMATE.

CONGRESSIONAL BASE TABLE REPORT

DEPARTMENT OF ENERGY
FY 1988 BASE TABLE BY APPROPRIATION
INTERIOR
(DOLLARS IN THOUSANDS)

AS OF DATE: 12/31/87 PAGE 10

ENERGY CONSERVATION—8910215

STATE/LOCAL PROGRAMS

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY	SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	AUTHORITY	CURRENT PROGRAMMING UNOBLIGATED CARRYOVER	OBLIGATIONAL AUTHORITY	ESTIMATED OUTLAYS
EMERGENCY ENERGY CONSERVATION ACT OF 1979	$	$	$	$	$	$ 4	$ 4	
ENERGY EXTENSION SERVICE	2,846				2,846	144	2,990	
SCHOOLS AND HOSPITALS	18,013				18,013	12,487	30,500	
LOCAL GOVERNMENT BUILDINGS GRANT PROGRAM						6	6	
WEATHERIZATION	115,547				115,547	1,401	116,948	
ENERGY POLICY AND CONSERVATION GRANTS (EPCA)	6,816				6,816	242	7,058	
ENERGY CONSERV AND PRODUCTION GRANTS (ECPA)						12	12	
PROGRAM DIRECTION	12,140	-45 A			12,095	2,616	14,711	
EVALUATION OF STATE AND LOCAL ENERGY SAVINGS						514	514	
PETROLEUM OVERCHARGE DISTRIBUTION AND RESTITUTION								
SCHOOLS AND HOSPITALS			7,143 B		7,143	537	7,680	
WEATHERIZATION			45,810 B		45,810		45,810	
ENERGY POLICY AND EXTENSION GRANTS (EPCA)			2,703 B		2,703		2,703	
ENERGY EXTENSION SERVICE			1,124 B		1,124		1,124	
SUBTOTAL, PETROLEUM OVERCHARGE DISTRIBUTION AND RESTITUTION			56,780		56,780	537	57,317	
TOTAL, STATE/LOCAL PROGRAMS	155,362	-45	56,780		212,097	17,963	230,060	

CURRENT CHANGES

A/REFLECTS DISTRIBUTION OF FERS REESTIMATE.

B/REFLECTS $56,780,000 TRANSFERRED FROM EXCESS (PODRA) FUNDS IN ACCORDANCE WITH P.L. 100-202.

DEPARTMENT OF ENERGY
FY 1988 BASE TABLE BY APPROPRIATION
INTERIOR
(DOLLARS IN THOUSANDS)

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY	SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	AUTHORITY	CURRENT PROGRAMMING UNOBLIGATED CARRYOVER	OBLIGATIONAL AUTHORITY	ESTIMATED OUTLAYS
ENERGY CONSERVATION--0910215								
MULTI-SECTOR								
ENERGY CONVERSION TECHNOLOGY....	$ 20,825	$	$	$	$ 20,825	$ 473	$ 21,298	
INVENTORS PROGRAM...............	4,890				4,890	450	5,340	
NATIONAL APPROPRIATE TECHNOLOGY INFORMATION SYSTEMS............	1,400				1,400	8	1,408	
APPROPRIATE TECHNOLOGY..........						50	50	
ENERGY IMPACT ASSISTANCE........						809	809	
PROGRAM DIRECTION...............	1,100	-12 A			1,088	311	1,399	
CAPITAL EQUIPMENT...............	800				800	79	879	
TOTAL, MULTI-SECTOR.............	29,015	-12			29,003	2,180	31,183	
POLICY AND MANAGEMENT								
PROGRAM DIRECTION...............	1,662				1,662	178	1,840	
POLICY ANALYSIS.................						7	7	
TOTAL, POLICY AND MANAGEMENT....	1,662				1,662	185	1,847	

CURRENT CHANGES
A/REFLECTS DISTRIBUTION OF FERS REESTIMATE.

DEPARTMENT OF ENERGY
FY 1988 BASE TABLE BY APPROPRIATION
INTERIOR
(DOLLARS IN THOUSANDS)

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY	SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	CURRENT PROGRAMMING			ESTIMATED OUTLAYS
					AUTHORITY	UNOBLIGATED CARRYOVER	OBLIGATIONAL AUTHORITY	
ENERGY CONSERVATION—0910215								
FACILITIES								
88-C106								
MATERIALS SCIENCE FACILITY, NORTHWESTERN UNIVERSITY.........	$ 6,000	$	$	$	$ 6,000	$	$ 6,000	
TOTAL, FACILITIES...............	6,000				6,000		6,000	
UNOBLIGATED BALANCES APPLIED TO PRIOR YEAR PROJECTS...............						1	1	
UNAPPLIED UNOBLIGATED CARRYOVER...								
USE OF PRIOR YEAR BALANCES........	-2,000	2,000 A						
FERS REESTIMATE..................	-105	105 B						
TOTAL, ENERGY CONSERVATION—0910215.............	$ 309,517	$	$ 56,700	$	$ 366,297	$ 39,534	$ 405,831	$321,600

CURRENT CHANGES
A/REFLECTS USE OF UNOBLIGATED BALANCES.
B/REFLECTS DISTRIBUTION OF FERS REESTIMATE.

DEPARTMENT OF ENERGY
FY 1989 BASE TABLE BY APPROPRIATION
INTERIOR
(DOLLARS IN THOUSANDS)

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY	SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	AUTHORITY	CURRENT PROGRAMMING UNOBLIGATED CARRYOVER	OBLIGATIONAL AUTHORITY	ESTIMATED OUTLAYS
ENERGY INFORMATION ADMINISTRATION--0900216								
NATIONAL ENERGY INFORMATION SYSTEM	$ 51,374	$ -186 A	$	$	$ 51,188	$	$ 51,188	
PROGRAM SERVICES....................								
POLICY AND MANAGEMENT.............	10,225	-15 A			10,210		10,210	
FERS REESTIMATE....................	-201	201 A						
TOTAL, ENERGY INFORMATION ADMINISTRATION--0900216...........	$ 61,398	$	$	$	$ 61,398	$	$ 61,398	$54,289

CURRENT CHANGES

A/REFLECTS DISTRIBUTION OF FERS REESTIMATE.

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY	SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	CURRENT PROGRAMMING AUTHORITY	UNOBLIGATED CARRYOVER	OBLIGATIONAL AUTHORITY	ESTIMATED OUTLAYS
ECONOMIC REGULATION—0980217								
FUELS CONVERSION..................	$ 587	$ -2 A	$	$	$ 585	$	$ 585	
COMPLIANCE........................	13.105	-67 A			13.038		13.038	
NATURAL GAS AND ELECTRICITY OPERATIONS........................	2.092	-13 A			2.079		2.079	
OFFICE OF HEARINGS AND APPEALS....	5.195	-29 A			5.166		5.166	
PROGRAM ADMINISTRATION............	701	-4 A			697		697	
FERC REESTIMATE...................	-115	115 A						
TOTAL, ECONOMIC REGULATION—0980217...............	$ 21.565	$	$	$	$ 21.565	$	$ 21.565	$21,136
STRATEGIC PETROLEUM RESERVE—0980218								
STORAGE FACILITIES DEVELOPMENT....	$ 151.886	$	$	$	$ 151.886	$ 61.136	$ 213.022	
MANAGEMENT........................	12.339	-63 A			12.276	7.062	19.338	
FERC REESTIMATE...................	-63	63 A						
TOTAL, STRATEGIC PETROLEUM RESERVE—0980218..................	$ 164.162	$	$	$	$ 164.162	$ 68.198	$ 232.360	$251,879

CURRENT CHANGES
A/REFLECTS DISTRIBUTION OF FERC REESTIMATE.

FY 1988 BASE TABLE BY APPROPRIATION
INTERIOR
(DOLLARS IN THOUSANDS)

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY	SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	AUTHORITY	CURRENT PROGRAMMING UNOBLIGATED CARRYOVER	OBLIGATIONAL AUTHORITY	ESTIMATED OUTLAYS
NAVAL PETROLEUM AND OIL SHALE RESERVE—0980219								
NAVAL PETROLEUM RESERVES								
NAVAL PETROLEUM RESERVES NOS. 1 & 2 (CALIFORNIA)................	$ 150,275	$	$	$	$ 150,275	$ 4	$ 150,279	
NAVAL PETROLEUM RESERVES NO. 3 (WYOMING)........................	21,740	-13,200 A			8,540	23,333	31,873	
PROGRAM DIRECTION..............	5,475	-37 B			5,438	1,847	7,285	
TOTAL, NAVAL PETROLEUM RESERVES.	177,490	-13,237			164,253	25,184	189,437	
NAVAL OIL SHALE RESERVES..........	210	-4,800 A			-4,590	6,525	1,935	
FEDERAL BUILDINGS SOLAR PROGRAM...						56	56	
MARKET ANALYSIS....................								
ENHANCED GAS RECOVERY.............						22	22	
URBAN WASTE.......................						51	51	
PROGRAM DIRECTION (SOLAR).........						55	55	
UNAPPLIED UNOBLIGATED CARRYOVER...						1	1	
USE OF PRIOR YEAR BALANCES........	-18,000	18,000 A						
FERS REESTIMATE...................	-37	37 B						
TOTAL, NAVAL PETROLEUM AND OIL SHALE RESERVE—0980219............	$ 159,663	$	$	$	$ 159,663	$ 31,894	$ 191,557	$158,350

CURRENT CHANGES
A/REFLECTS USE OF PRIOR YEAR BALANCES.
B/REFLECTS DISTRIBUTION OF FERS REESTIMATE.

DEPARTMENT OF ENERGY
FY 1988 BASE TABLE BY APPROPRIATION
INTERIOR
(DOLLARS IN THOUSANDS)

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY	SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	AUTHORITY	CURRENT PROGRAMMING (UNOBLIGATED CARRYOVER)	OBLIGATIONAL AUTHORITY	ESTIMATED OUTLAYS
STRATEGIC PETROLEUM RESERVE, PETROLEUM ACCOUNT—0910233								
PETROLEUM ACQUISITION AND TRANSPORTATION....................	$ 438,744	$	$	$	$ 438,744	$	$ 438,744	
TOTAL, STRATEGIC PETROLEUM RESERVE, PETROLEUM ACCOUNT—0910233..................	$ 438,744	$	$	$	$ 438,744	$	$ 438,744	$352,755
EMERGENCY PREPAREDNESS—0900234								
EMERGENCY PREPAREDNESS............	$ 6,206	$ -34 B	$	$	$ 6,172	$	$ 6,172	
FERS REESTIMATE....................	-34	34 B						
TOTAL, EMERGENCY PREPAREDNESS—0900234.............	$ 6,172	$	$	$	$ 6,172	$	$ 6,172	$ 6,395
CLEAN COAL TECHNOLOGY—0910235								
CLEAN COAL TECHNOLOGY.............	$ 50,000	$	$	$	$ 50,000	$	$ 50,000	
TOTAL, CLEAN COAL TECHNOLOGY—0910235.9............	$ 50,000	$	$	$	$ 50,000	$	$ 50,000	$ 55,401

CURRENT CHANGES
B/REFLECTS DISTRIBUTION OF FERS REESTIMATE.

FY 1988 BASE TABLE BY APPROPRIATION
INTERIOR
(DOLLARS IN THOUSANDS)

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY	SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	AUTHORITY	CURRENT PROGRAMMING UNOBLIGATED CARRYOVER	OBLIGATIONAL AUTHORITY	ESTIMATED OUTLAYS
CLEAN COAL TECHNOLOGY - 0915154								
CLEAN COAL TECHNOLOGY..............	$	$	$ 149.100 A	$	$ 149.100	$ 223.590	$ 372.690	
TOTAL, CLEAN COAL TECHNOLOGY - 0915154	$	$	$ 149.100	$	$ 149.100	$ 223.590	$ 372.690	
ENERGY SECURITY RESERVE, ALTERNATE FUELS PRODUCTION--0915180								
ENERGY SECURITY RESERVE, ALTERNATE FUELS PRODUCTION								
PROJECT DEVELOPMENT FEASIBILITY STUDIES..........................	$	$	$	$	$	$ 776	$ 776	
COOPERATIVE AGREEMENTS WITH NON-FEDERAL ENTITIES............						811	811	
PROGRAM MANAGEMENT..............						43	43	
LOAN GUARANTEE DEFAULT RESERVE..						382	382	
TOTAL, ENERGY SECURITY RESERVE, ALTERNATE FUELS PRODUCTION......						2.012	2.012	
TOTAL, ENERGY SECURITY RESERVE, ALTERNATE FUELS PRODUCTION--0915180...............	$	$	$	$	$	$ 2.012	$ 2.012	$1,173

CURRENT CHANGES
A/REFLECTS APPROPRIATION TRANSFER OF $149.100.000 FROM THE U.S. TREASURY IN ACCORDANCE WITH P.L. 99-190.

DEPARTMENT OF ENERGY
FY 1988 BASE TABLE BY APPROPRIATION
INTERIOR
(DOLLARS IN THOUSANDS)

	APPROPRIATION AUTHORITY	STRUCTURE/ OTHER CHANGES AUTHORITY	SUPPLEMENTAL CHANGE AUTHORITY	REPROGRAMMING CHANGE AUTHORITY	AUTHORITY	CURRENT PROGRAMMING UNOBLIGATED CARRYOVER	OBLIGATIONAL AUTHORITY	ESTIMATED OUTLAYS
TOTAL INTERIOR APPROPRIATIONS	$ 1,538,196	$ 20,094	$ 205,000	$	$ 1,764,970	$ 413,022	$ 2,177,992	$1,548,046

QUESTIONS SUBMITTED BY SENATOR JAMES A. MCCLURE

QUESTION 2: For each rescission, deferral or supplemental appropriation indicated in question 1, would you provide for the record its justification and status?

ANSWER: As indicated in the answer to question 1 above, no rescission, deferrals, or supplemental appropriations are currently proposed for FY 1988.

QUESTION FROM SENATOR McCLURE

QUESTION 3. Would you provide for the record a fiscal year 1989 appropriations account baseline table (commonly referred to as the Holifield table), indicating the request (a) made by each program of the Assistant Secretary, (b) made by the Assistant Secretary of the Secretary, (c), made by the Department by OMB, and (d) included in the President's proposed budget?

ANSWER: Table provided below.

18-Feb 88

DEPARTMENT OF ENERGY
FY 1989 Congressional Budget
Budget History Table

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NOTE: Data shown in this table as "FY 1989 A/S Req." represents the highest funding level included in the Department's internal budget formulation process. The funding level actively supported by the cognizant program office during management's review of the budget generally was lower.

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
999100	SUMMARY BY APPROPRIATION:				
999115	ENERGY SUPPLY R&D	1,860,087	2,442,648	2,151,466	1,969,760
999125	URANIUM SUPPLY AND ENRICHMENT ACTIVITIES	950,000	-205,000	-27,700	1,104,000
999110	GENERAL SCIENCE AND RESEARCH ACTIVITIES	355,108	1,266,950	1,198,106	164,986
999158	TOTAL, ISOTOPE PRODUCTION & DIST FUND	89	-----	-----	16,243
999163	BASIC RESEARCH USER FACILITIES	574,965	-----	-----	972,613
999105	ATOMIC ENERGY DEFENSE ACTIVITIES	7,749,364	9,412,789	9,051,370	8,100,000
999215	DEPARTMENTAL ADMINISTRATION	164,243	254,398	212,614	177,814
999164	POWER MARKETING ADMINISTRATIONS:				
999165	ALASKA POWER ADMINISTRATION	3,026	3,299	3,299	3,159
999170	BONNEVILLE POWER ADMINISTRATION	165,000	260,400	260,400	136,000
999175	SOUTHEASTERN POWER O&M	27,400	36,376	36,306	36,267
999180	SOUTHEASTERN CONT. FUND	-----	-----	-----	-----
999185	SOUTHWESTERN POWER O&M	16,648	35,841	28,770	15,389
999190	SOUTHWESTERN POWER CONT. FUND	-----	1,200	-----	-----
999195	WESTERN AREA POWER O&M	249,515	363,200	299,461	298,413
999200	WAPA EMERGENCY FUND	24	-----	-----	-----
999205	COLORADO RIVER BASIN	-----	-----	-----	-----
999206	TOTAL, POWER MARKETING ADMINISTRATIONS	461,613	700,316	628,236	489,228
999155	FERC SALARIES AND EXPENSES	100,000	-----	-----	106,760
999136	NUCLEAR WASTE DISPOSAL FUND	360,000	1,171,800	448,832	448,832
999160	GEOTHERMAL RESOURCES DEVELOPMENT FUND	72	72	72	75
999161	SPECIAL FOREIGN CURRENCY	-----	-----	-----	-----
999162	ALCOHOL FUELS	-----	-----	-----	-----
999137	ALTERNATIVE FUELS PRODUCTION	-----	-----	-----	-----
989162	CLEAN COAL TECHNOLOGY	50,000	500,000	500,000	525,000
999120	FOSSIL ENERGY RESEARCH AND DEVELOPMENT	326,975	298,952	176,112	166,992
999130	NAVAL PETROLEUM AND OIL SHALE RESERVES	159,663	206,300	169,094	185,071
999135	ENERGY CONSERVATION	309,517	190,448	96,671	89,359
999150	ECONOMIC REGULATION	21,565	21,732	20,772	20,772
999149	EMERGENCY PREPAREDNESS	6,172	7,584	6,848	6,154
502204	UNALLOCATED OMB TARGET	-----	-----	-----	-----
999140	STRATEGIC PETROLEUM RESERVE	164,162	173,549	173,817	173,421
989187	STRATEGIC PETROLEUM ACCOUNT	438,744	764,310	764,310	1,017,907
999145	ENERGY INFORMATION ADMINISTRATION	61,398	65,027	63,340	62,856
502100	PAYMENTS TO STATES	1,839	752	752	1,909
989850	SUBTOTAL DOE	14,115,554	17,272,627	15,654,362	16,079,752

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
999488	EFFECT OF PRIVATIZATION:				
999490	ALASKA POWER	-----	-----	-----	-----
999492	BONNEVILLE POWER	-----	-----	-----	-----
999494	SOUTHEASTERN POWER	-----	-----	-----	-----
999496	SOUTHWESTERN POWER	-----	-----	-----	-----
999498	WESTERN AREA POWER	-----	-----	-----	-----
999500	COLORADO RIVER BASIN	-----	-----	-----	-----
999502	NAVAL PETROLEUM & OIL SHALE RESERVES	-----	-201,600	-191,728	-----
999852	TOTAL DOE	14,115,556	17,071,027	15,462,634	16,079,752

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
600000	RECEIPTS				
600002	URANIUM ENRICHMENT	-1,109,000	-----	-----	-1,292,000
600003	NAVAL PETROLEUM RESERVE	-755,759	-877,824	-909,717	-759,164
600004	POWER MARKETING				
600005	Power Marketing	-----	-----	-----	-----
600006	Alaska	-8,326	-8,991	-8,991	-8,231
600007	Bonneville	-122,200	-176,900	-176,900	-127,900
600008	Southeastern	-119,533	-129,224	-129,224	-129,224
600010	Southwestern	-89,574	-103,649	-103,067	-91,185
600011	Western area	-335,361	-357,437	-320,012	-307,936
600012	Total, Power Marketing	-674,992	-776,201	-738,174	-664,476
600016	NUCLEAR WASTE FUND - KWH FEE	-479,500	-507,600	-498,600	-497,600
600014	NUCLEAR WASTE FUND - SNF	-28,500	-39,600	-39,600	-39,600
600015	NUCLEAR WASTE FUND - DEFENSE	-----	-----	-----	-----
600018	NWF - INTEREST REALIZED	-155,700	-124,500	-130,400	-176,400
600025	OTHER	-6,600	-6,600	-----	-13,859
600027	FERC	-149,459	-----	-----	-106,760
600030	TOTAL RECEIPTS	-3,359,510	-2,332,125	-2,316,491	-3,549,859
600035	TOTAL DOE LESS RECEIPTS	10,754,046	14,738,902	13,146,143	12,529,893
600036	EFFECT OF PRIVATIZATION RECEIPTS:				
600037	NAVAL PETROLEUM RESERVE	-----	877,824	909,717	-----
600038	POWER MAKETING ADMINISTRATION	-----	-----	-----	-----
600039	TOTAL, DOE	10,754,046	15,616,726	14,055,860	12,529,893
600070	ADVANCES FOR COOPERATIVE WORK				
600071	ADVANCES FOR COOPERATIVE WORK	130,200	138,200	144,867	144,867
600073	PROPRIETARY RECEIPTS FROM THE PUBLIC	-130,200	-138,200	-144,867	-144,867
600074	TOTAL, ADVANCES FOR COOPERATIVE WORK	-----	-----	-----	-----

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DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
992000	ENERGY SUPPLY R&D				
70010	SOLAR ENERGY				
70013	SOLAR BUILDINGS ENERGY SYSTEMS				
70014	OPERATING EXPENSES................................	5,250	7,200	5,365	5,365
70015	PLANT AND CAPITAL EQUIPMENT......................	150	-----	-----	-----
70016	TOTAL, SOLAR BUILDING ENERGY SYSTEMS...............	5,400	7,200	5,365	5,365
70049	PHOTOVOLTAIC ENERGY SYSTEMS				
70050	OPERATING EXPENSES................................	34,700	33,010	23,380	23,380
70051	PLANT AND CAPITAL EQUIPMENT......................	300	1,700	800	800
70052	TOTAL, PHOTOVOLTAIC ENERGY SYSTEMS..................	35,000	34,710	24,180	24,180
70089	SOLAR THERMAL ENERGY SYSTEMS				
70090	OPERATING EXPENSES................................	16,950	23,140	14,700	14,700
70091	PLANT AND CAPITAL EQUIPMENT......................	80	300	300	300
70092	TOTAL, SOLAR THERMAL ENERGY SYSTEMS.................	17,030	23,440	15,000	15,000
70099	BIOFUELS ENERGY SYSTEMS				
70100	OPERATING EXPENSES................................	17,055	11,890	10,480	10,480
70101	PLANT AND CAPITAL EQUIPMENT......................	-----	800	555	555
70102	TOTAL, BIOFUELS ENERGY SYSTEMS......................	17,055	12,690	11,035	11,035
70139	WIND ENERGY SYSTEMS				
70140	OPERATING EXPENSES................................	8,140	13,900	8,339	8,339
70141	PLANT AND CAPITAL EQUIPMENT......................	400	500	500	500
70142	TOTAL, WIND ENERGY SYSTEMS..........................	8,540	14,400	8,839	8,839
70149	OCEAN ENERGY SYSTEMS				
70150	OPERATING EXPENSES................................	4,000	4,098	3,105	3,105
70151	PLANT AND CAPITAL EQUIPMENT......................	-----	-----	-----	-----
70152	TOTAL, OCEAN ENERGY SYSTEMS.........................	4,000	4,098	3,105	3,105
70259	INTERNATIONAL SOLAR ENERGY PROGRAM				
70260	OPERATING EXPENSES................................	750	700	541	541
70261	PLANT AND CAPITAL EQUIPMENT......................	-----	-----	-----	-----
70262	TOTAL, INTERNATIONAL SOLAR ENERGY PROGRAM...........	750	700	541	541

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
70269	SOLAR TECHNOLOGY TRANSFER				
70270	OPERATING EXPENSES	2,590	2,512	1,780	1,780
70271	PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----
70272	TOTAL, SOLAR TECHNOLOGY TRANSFER	2,590	2,512	1,780	1,780
70279	SOLAR ENERGY RESEARCH INSTITUTE				
70280	OPERATING EXPENSES	-----	-----	-----	-----
70281	PLANT AND CAPITAL EQUIPMENT	620	6,277	4,642	4,642
70282	TOTAL, SOLAR ENERGY RESEARCH INSTITUTE	620	6,277	4,642	4,642
70283	PROGRAM SUPPORT	937	1,200	970	970
70285	RESOURCE ASSESSMENT				
70286	OPERATING EXPENSES	700	830	709	709
70287	PLANT AND CAPITAL EQUIPMENT	20	45	45	45
70288	TOTAL, RESOURCE ASSESSMENT	720	875	754	754
70290	PROGRAM DIRECTION - OTHER SOLAR ENERGY	4,196	5,427	4,221	4,164
70308	SUBTOTAL, SOLAR ENERGY	96,852	113,529	80,432	80,375
70309	COOPERATIVE VENTURE R&D POOLS	-----	-----	3,000	-----
70313	GEOTHERMAL				
70314	OPERATING EXPENSES	20,935	19,470	15,670	15,661
70315	PLANT AND CAPITAL EQUIPMENT	-----	1,595	795	795
70316	TOTAL, GEOTHERMAL	20,935	21,065	16,465	16,456
70317	HYDROPOWER				
70318	OPERATING EXPENSES	-----	-----	-----	-----
70319	PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----
70320	TOTAL, HYDROPOWER	-----	-----	-----	-----
70321	ELECTRIC ENERGY SYSTEMS				
70322	OPERATING EXPENSES	15,270	23,546	10,838	17,766
70323	PLANT AND CAPITAL EQUIPMENT	-----	294	-----	-----
70324	TOTAL, ELECTRIC ENERGY SYSTEMS	15,270	23,840	10,838	17,766
70329	ENERGY STORAGE SYSTEMS				
70330	OPERATING EXPENSES	14,474	23,053	8,471	8,466
70331	PLANT AND CAPITAL EQUIPMENT	26	427	27	27
70332	TOTAL, ENERGY STORAGE SYSTEMS	14,500	23,480	8,498	8,493

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DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

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Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
40014	LIGHT WATER REACTOR				
40015	OPERATING EXPENSES................................	32,000	36,600	29,800	26,800
40016	PLANT AND CAPITAL EQUIPMENT.......................	-----	-----	-----	-----
40017	TOTAL, LIGHT WATER REACTOR........................	32,000	36,600	29,800	26,800
40020	ADVANCED REACTOR R&D				
40021	OPERATING EXPENSES................................	89,070	83,830	66,150	60,200
40022	PLANT AND CAPITAL EQUIPMENT.......................	3,500	3,870	1,750	1,000
40023	TOTAL, ADVANCED REACTOR R&D.......................	92,570	87,700	67,900	61,200
40026	FACILITIES				
40027	OPERATING EXPENSES................................	105,900	96,100	96,900	96,900
40028	PLANT AND CAPITAL EQUIPMENT.......................	11,800	13,800	13,800	13,800
40029	TOTAL, FACILITIES.................................	117,700	109,900	110,700	110,700
40032	WATER COOLED BREEDER				
40033	OPERATING EXPENSES................................	-----	-----	-----	-----
40034	PLANT AND CAPITAL EQUIPMENT.......................	-----	-----	-----	-----
40035	TOTAL, WATER COOLED BREEDER.......................	-----	-----	-----	-----
40070	PROGRAM DIRECTION				
40071	OPERATING EXPENSES................................	8,500	9,214	8,514	8,470
40072	PLANT AND CAPITAL EQUIPMENT.......................	-----	-----	-----	-----
40073	TOTAL, PROGRAM DIRECTION..........................	8,500	9,214	8,514	8,470
40055	ADVANCED NUCLEAR SYSTEMS				
40056	OPERATING EXPENSES................................	19,800	24,700	24,700	24,700
40059	PLANT AND CAPITAL EQUIPMENT.......................	1,200	3,000	3,000	3,000
40062	TOTAL, ADVANCED NUCLEAR SYSTEMS...................	21,000	27,700	27,700	27,700
40063	SPACE/DEFENSE POWER SYSTEMS				
40064	OPERATING EXPENSES................................	63,460	130,520	87,520	75,490
40065	PLANT AND CAPITAL EQUIPMENT.......................	11,790	34,480	29,480	41,510
40066	TOTAL SPACE/DEFENSE POWER SYSTEMS.................	75,250	165,000	117,000	117,000
40090	SUBTOTAL, NUCLEAR R&D ACTIVITIES..................	347,020	436,114	361,614	351,870

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DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
82010	CIVILIAN WASTE R & D				
82020	OPERATING EXPENSES	5,000	2,700	2,500	2,490
82030	PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----
82040	TOTAL, CIVILIAN WASTE R & D	5,000	2,700	2,500	2,490
40100	REMEDIAL ACTION AND WASTE TECHNOLOGY				
40101	OPERATING EXPENSES	246,000	295,400	258,800	257,200
40102	PLANT AND CAPITAL EQUIPMENT	750	1,500	1,500	3,100
40103	TOTAL, REMEDIAL ACTION AND WASTE TECHNOLOGY	246,750	296,900	260,300	260,300
95005	ENVIRONMENT, SAFETY, AND HEALTH				
95008	OPERATING EXPENSES	65,900	105,000	101,900	106,900
95011	PLANT AND CAPITAL EQUIPMENT	2,100	-----	3,100	3,100
95012	TOTAL ENVIRONMENT, SAFETY AND HEALTH	68,000	105,000	105,000	110,000
20002	BIOLOGICAL AND ENVIRONMENTAL RESEARCH				
20003	OPERATING EXPENSES	204,585	261,750	235,010	236,500
20004	PLANT AND CAPITAL EQUIPMENT	64,700	15,500	12,500	12,500
20005	TOTAL, BIOLOGICAL AND ENVIRONMENTAL RESEARCH	269,285	277,250	247,510	249,000
50430	LIQUIFIED GASEOUS SPILL TEST FACILITY				
50435	OPERATING EXPENSES	1,000	2,517	767	766
50440	PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----
50445	TOTAL, LIQUIFIED GASEOUS SPILL TEST FACILITY	1,000	2,517	767	766
20049	MAGNETIC FUSION				
20050	OPERATING EXPENSES	298,430	336,000	325,700	317,465
20051	PLANT AND CAPITAL EQUIPMENT	36,570	84,300	55,300	42,535
20052	TOTAL, MAGNETIC FUSION	335,000	420,300	381,000	360,000
20053	BASIC ENERGY SCIENCES				
20056	OPERATING EXPENSES	327,059	458,751	430,745	344,452
20057	PLANT AND CAPITAL EQUIPMENT	110,161	107,699	85,400	31,210
20058	TOTAL, BASIC ENERGY SCIENCES	437,220	566,450	516,145	375,662

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 COND REQUEST
20065	ENERGY RESEARCH OVERSIGHT,ANALY. & UNIV. SUPPORT				
20069	ENERGY RESEARCH ANALYSIS				
20070	OPERATING EXPENSES	3,700	3,850	3,800	3,800
20071	PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----
20072	TOTAL, ENERGY RESEARCH ANALYSIS	3,700	3,850	3,800	3,800
20075	UNIVERSITY RESEARCH INSTRUMENTATION	5,000	5,000	5,000	5,000
20079	UNIVERSITY RESEARCH SUPPORT				
20080	OPERATING EXPENSES	18,400	15,770	15,770	15,770
20081	PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----
20082	TOTAL, UNIVERSITY RESEARCH SUPPORT	18,400	15,770	15,770	15,770
20083	ADVISORY & OVERSIGHT PROG. DIRECTION	3,200	3,650	3,350	3,339
20084	SUBTOTAL, ENERGY RESEARCH OS.,ANAL., & UNIV. SUP.	30,300	28,270	27,920	27,909
20089	MULTI-PROGRAM LABORATORIES FACILITIES SUPPORT				
20090	OPERATING EXPENSE	12,900	10,670	10,670	8,770
20091	PLANT AND CAPITAL EQUIPMENT	40,700	55,205	55,205	57,105
20092	TOTAL, MULTI-PROGRAM LABORATIES FACILITIES SUPPORT	53,600	65,875	65,875	65,875
20095	SMALL BUSINESS INNOVATION RESEARCH PROGRAM	-----	-----	-----	-----
20113	ISOTOPE PRODUCTION	-----	-----	16,243	-----
20114	ISOTOPE SALES	-----	-----	-16,452	-----
999352	IN-HOUSE ENERGY MANAGEMENT				
159002	OPERATING EXPENSES	1,900	2,000	2,000	2,000
159003	PLANT AND CAPITAL EQUIP	16,900	17,520	17,520	17,520
999353	TOTAL, IN-HOUSE ENERGY MANAGEMENT	18,800	19,520	19,520	19,520
153030	STRATEGIC FACILITIES UTILIZATION PROGRAM				
153032	OPERATING EXPENSES	1,775	11,422	11,422	1,977
153034	PLANT AND CAPITAL EQUIPMENT	400	5,578	5,578	198
153036	TOTAL, STRATEGIC FACILITIES UTILIZATION PROGRAM	2,175	17,000	17,000	2,175
159006	TECHNICAL INFORMATION & MANAGEMENT PROGRAM				
159007	OPERATING EXPENSES	13,100	14,062	14,062	13,100
159008	PLANT AND CAPITAL EQUIPMENT	900	3,600	3,600	3,400
159009	SUPPORT FROM OTHER PROGRAMS	-----	-----	-----	-----
159010	TOTAL, TECHNICAL INFORMATION & MANAGEMENT PROGRAM	14,000	17,662	17,662	16,500

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
20105	POLICY AND MANAGEMENT - ER (ESRD)	650	900	675	667
40107	POLICY AND MANAGEMENT - NE (ESRD)	2,200	2,500	2,178	2,165
70335	POLICY AND MANAGEMENT - CE(ESRD)	1,450	1,776	1,776	1,763
992089	TOTAL, ENERGY SUPPLY R & D	1,980,087	2,442,640	2,156,466	1,969,760
20265	SBIR FROM UNOBLIG-(CLEAN COAL TECH)ESRD	-----	-----	-----	-----
20213	SAVINGS FROM MANAGEMENT INITIATIVES - (ER)ESRD	-----	-----	-----	-----
70589	COOPERATIVE VENTURES - BACKOUT - CE(ESRD)	-----	-----	-5,000	-----
210028	USE OF UNOBLIG. BALANCES - UE	-104,000	-----	-----	-----
210050	GENERAL REDUCTION - ESRD	-----	-----	-----	-----
210052	REVISED ECONOMIC ASSUMPTIONS-MA(ESRD)	-----	-----	-----	-----
95013	LESS PROPOSED TRANSFER OF UNOBLIGATED BALANCES(ESRD)	-----	-----	-----	-----
40400	USE OF PRIOR YEAR BALANCES - (NE)ESRD	-16,000	-----	-----	-----
95057	TARGET SHORT FALL	-----	-----	-----	-----
159557	REQUIREMENTS FOR FERS-(MA) ESRD	-----	-----	-----	-----
992090	TOTAL, ENERGY SUPPLY R & D	1,860,087	2,442,640	2,151,466	1,969,760
992091	(OPERATING EXPENSES)	1,556,924	2,084,650	1,856,069	1,732,118
992092	(PLANT AND CAPITAL EQUIPMENT)	303,163	357,990	295,397	237,642

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DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
993000	URANIUM ENRICHMENT				
40108	URANIUM ENRICHMENT ACTIVITIES				
40109	OPERATING EXPENSES	921,000	1,012,700	1,229,500	1,098,200
40110	PLANT AND CAPITAL EQUIPMENT	34,000	84,200	90,300	80,700
40112	REPAYMENT TO TREASURY	-----	-----	-----	-----
40113	REPAYMENT TO TREASURY (NON-ADD)	-----	-----	(-27,700)	-----
40116	SUBTOTAL, URANIUM ENRICHMENT ACTIVITIES	955,000	1,096,900	1,319,800	1,178,900
40118	URANIUM PROGRAM DIRECTION	5,000	5,100	5,100	5,100
40119	TOTAL, URANIUM ENRICHMENT ACTIVITIES	960,000	1,102,000	1,324,900	1,184,000
40138	REVENUES				
40139	OPERATING EXPENSES	-----	-1,307,000	-1,352,600	-----
40140	PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----
40141	TOTAL, REVENUES	-----	-1,307,000	-1,352,600	-----
40405	USE OF PRIOR BALANCE-(NE NUE	-10,000	-----	-----	-----
40285	RESCISSIONS, DEFERRALS, SUPP	-----	-----	-----	-----
993090	TOTAL, URANIUM ENRICHMENT	950,000	-205,000	-27,700	1,184,000
993091	(OPERATING EXPENSES)	916,000	-289,200	-118,000	1,103,300
993092	(PLANT AND CAPITAL EQUIPMENT)	34,000	84,200	90,300	80,700

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
991500	GENERAL SCIENCE				
20117	HIGH ENERGY PHYSICS				
20118	OPERATING EXPENSES	136,998	528,100	510,606	144,906
20119	PLANT AND CAPITAL EQUIPMENT	80,400	439,650	419,200	75,482
20120	TOTAL, HIGH ENERGY PHYSICS	217,398	967,750	929,806	220,388
20121	NUCLEAR PHYSICS				
20122	OPERATING EXPENSES	113,135	194,300	193,100	118,130
20123	PLANT AND CAPITAL EQUIPMENT	21,775	100,200	71,000	23,250
20124	TOTAL, NUCLEAR PHYSICS	134,910	294,500	264,100	141,380
20125	GENERAL SCIENCE PROGRAM DIRECTION (GS)	2,800	4,700	4,200	3,218
991593	TOTAL, GENERAL SCIENCE	355,108	1,266,950	1,198,106	364,986
20712	GENERAL REDUCTION - (ERMS	-----	-----	-----	-----
20255	LESS PROPOSED TRANS OF UNOBLIG BALANCES	-----	-----	-----	-----
991594	TOTAL, GENERAL SCIENCE	355,108	1,266,950	1,198,106	364,986
991591	(OPERATING EXPENSES)	252,933	727,100	707,906	266,254
991592	(PLANT AND CAPITAL EQUIPMENT)	102,175	539,850	490,200	98,732

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
20128	ISOTOPE PRODUCTION AND DISTRIBUTION FUND				
20129	ISOTOPE PRODUCTION	17,551	-----	-----	16,243
20130	ISOTOPE SALES	-17,462	-----	-----	-----
20135	SUBTOTAL, ISOTOPE PRODUCTION & DIST FUND	89	-----	-----	16,243

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
20136	BASIC RESEARCH USER FACILITIES				
20137	BASIC ENERGY SCIENCES				
20138	OPERATING EXPENSES	87,085	-----	-----	86,293
20139	PLANT AND CAPITAL EQUIPMENT	38,470	-----	-----	54,190
20140	TOTAL, BASIC ENERGY SCIENCES	125,555	-----	-----	140,483
20141	NUCLEAR PHYSICS				
20142	OPERATING EXPENSES	72,790	-----	-----	74,962
20143	PLANT AND CAPITAL EQUIPMENT	37,400	-----	-----	47,750
20144	TOTAL, NUCLEAR PHYSICS	110,190	-----	-----	122,712
20145	HIGH ENERGY PHYSICS				
20146	OPERATING EXPENSES	276,700	-----	-----	301,700
20147	PLANT AND CAPITAL EQUIPMENT	37,500	-----	-----	44,718
20148	TOTAL, HIGH ENERGY PHYSICS	314,200	-----	-----	346,418
20149	SUPERCONDUCTING SUPER COLLIDER				
20150	OPERATING EXPENSES	25,000	-----	-----	64,000
20151	PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	299,000
20152	TOTAL, SUPERCONDUCTING SUPER COLLIDER	25,000	-----	-----	363,000
20153	TOTAL, USER FACILITIES	574,945	-----	-----	972,613
991005	(OPERATING EXPENSES)	461,575	-----	-----	526,955
991010	(PLANT AND CAPITAL EQUIPMENT)	113,370	-----	-----	445,658

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DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
991000	ATOMIC ENERGY				
10010	RESEARCH, DEVELOPMENT AND TESTING				
10011	OPERATING EXPENSES	1,556,569	1,907,890	1,765,900	1,576,784
10014	PLANT AND CAPITAL EQUIPMENT	348,290	447,795	444,858	337,529
10017	TOTAL, RESEARCH AND DEVELOPMENT AND TESTING	1,904,859	2,355,685	2,210,758	1,914,313
10019	NUCLEAR DIRECTED ENERGY WEAPONS				
10020	OPERATING EXPENSES	-----	-----	-----	-----
10021	PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----
10022	TOTAL, NUCLEAR DIRECTED ENERGY WEAPONS	-----	-----	-----	-----
10024	INERTIAL CONFINEMENT FUSION				
10025	OPERATING EXPENSES	-----	-----	-----	-----
10026	PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----
10027	TOTAL, INERTIAL CONFINEMENT FUSION	-----	-----	-----	-----
10029	PRODUCTION AND SURVEILLANCE				
10030	OPERATING EXPENSES	1,853,690	2,092,000	2,050,600	1,909,445
10031	PLANT AND CAPITAL EQUIPMENT	374,030	467,675	422,675	351,783
10032	TOTAL, PRODUCTION AND SURVEILLANCE	2,227,720	2,559,675	2,473,275	2,261,228
10040	PROGRAM DIRECTION - DEFENSE PROGRAMS	76,826	104,880	81,500	81,400
10059	MATERIALS PRODUCTION				
10060	OPERATING EXPENSES	1,424,521	1,810,000	1,831,512	1,572,772
10061	PLANT AND CAPITAL EQUIPMENT	384,166	620,000	575,288	443,987
10062	TOTAL, MATERIALS PRODUCTION	1,808,687	2,430,000	2,406,800	2,016,759
10064	DEFENSE WASTE & ENVIRONMENTAL RESTORATION				
10065	OPERATING EXPENSES	578,519	721,952	704,785	732,624
10066	PLANT AND CAPITAL EQUIPMENT	316,813	273,365	273,365	246,876
10067	USE OF PRIOR YEAR AED BALANCES	-----	-----	-----	-43,000
10068	TOTAL, DEFENSE WASTE & ENVIRONMENTAL RESTORATION	895,332	995,317	978,150	936,500
10049	VERIFICATION AND CONTROL TECHNOLOGY				
10050	OPERATING EXPENSES	115,900	173,500	121,200	131,200
10051	PLANT AND CAPITAL EQUIPMENT	5,100	8,400	8,400	8,400
10052	TOTAL, VERIFICATION AND CONTROL TECHNOLOGY	121,000	181,900	129,600	139,600

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
10069	NUCLEAR SAFEGUARDS & SECURITY				
10070	OPERATING EXPENSES	73,340	89,924	78,279	75,400
10071	PLANT AND CAPITAL EQUIPMENT	4,600	5,200	4,800	4,800
10072	TOTAL, NUCLEAR SAFEGUARDS & SECURITY	77,940	95,124	83,079	80,200
10079	SECURITY INVESTIGATIONS				
10080	OPERATING EXPENSES	32,000	52,608	50,608	40,000
40154	NAVAL REACTORS DEVELOPMENT				
40155	OPERATING EXPENSES	544,100	558,000	558,000	555,400
40156	PLANT AND CAPITAL EQUIPMENT	62,900	79,600	79,600	74,600
40157	TOTAL, NAVAL REACTORS DEVELOPMENT	607,000	637,600	637,600	630,000
991093	TOTAL, ATOMIC ENERGY	7,749,364	9,412,789	9,051,370	8,100,000
10204	GENERAL REDUCTION	-----	-----	-----	-----
991095	TOTAL, ATOMIC ENERGY	7,749,364	9,412,789	9,051,370	8,100,000
991091	(OPERATING EXPENSES)	6,253,465	7,510,754	7,242,384	6,675,025
991092	(PLANT AND CAPITAL EQUIPMENT)	1,495,899	1,902,035	1,808,986	1,467,975

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
999000	DEPARTMENTAL ADMINISTRATION				
164005	OFFICE OF THE SECRETARY	2,191	2,204	2,204	2,204
162005	BOARD OF CONTRACT APPEALS	443	442	442	436
160006	GENERAL COUNSEL	11,003	11,043	11,043	10,876
170010	INSPECTOR GENERAL - OE	21,245	24,491	21,245	20,661
170012	INSPECTOR GENERAL - CE	288	719	298	298
170100	TOTAL, INSPECTOR GENERAL	21,533	25,210	21,543	20,959
151999	MANAGEMENT AND ADMINISTRATION				
152000	OPERATING EXPENSES	155,091	163,779	158,679	150,513
152005	PLANT AND CAPITAL EQUIPMENT	4,479	4,445	4,445	5,612
152009	TOTAL MANAGEMENT AND ADMINISTRATION	159,570	168,224	163,124	156,125
153024	OPERATIONS OFFICES				
153025	OPERATING EXPENSES	108,443	123,190	111,455	106,283
153026	PLANT AND CAPITAL EQUIPMENT	1,210	4,811	3,501	1,252
153028	TOTAL, OPERATIONS OFFICES	109,653	128,001	114,956	107,535
200010	MINORITY ECONOMIC IMPACT	3,860	7,240	4,473	3,000
120010	POLICY ANALYSIS AND SYSTEM STUDIES	6,084	8,204	7,081	6,040
999091	CONGRESSIONAL, INTERGOV. & PUBLIC AFFAIRS				
190037	PROGRAM DIRECTION	5,231	5,858	5,227	4,655
190010	INDIAN AFFAIRS	200	-----	-----	-----
190030	CONSUMER AFFAIRS	65	100	100	67
190020	PUBLIC AFFAIRS	251	300	300	260
190021	COMPETITION	50	50	50	50
999092	SUBTOTAL, CONGRESS., INTERGOV. & PUBLIC AFFAIRS	5,797	6,308	5,677	5,032
140100	INTERNATIONAL AFFAIRS	5,571	6,233	5,782	5,545
999093	SUBTOTAL, ADMINISTRATIVE OPERATIONS	325,705	363,109	336,325	318,630

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
159015	COST OF WORK FOR OTHERS	95,734	115,562	115,562	115,562
159016	GENERAL REDUCTION	-----	-----	-----	-----
159018	REVENUES ASSOCIATED WITH COST OF WORK	-112,988	-137,008	-137,008	-137,008
159019	OTHER REVENUES	-103,446	-87,265	-87,265	-87,265
159021	SUBTOTAL, REVENUES	-216,434	-224,273	-224,273	-224,273
999097	TOTAL, DEPARTMENTAL ADMINISTRATION	205,005	254,398	227,614	209,927
159120	USE OF PRIOR YEAR BALANCES - (MA)DA	-----	-----	-----	-----
159508	TRANSF IN FOR PUB AFF. & FOREIGN TRAVEL RED	-----	-----	-----	-----
159512	USE OF PRIOR YEAR BALANCES	-----	-----	-----	-----
120030	USE OF PRIOR YEAR UNOBL BAL - (PA)DA	-90	-----	-----	-----
140110	USE OF PRIOR YEAR UNOBL BAL - (IA)DA	-193	-----	-----	-----
159559	USE OF PRIOR YEAR UNOBL BAL - (MA)DA	-35,216	-----	-15,000	-30,113
160014	USE OF PRIOR YEAR UNOBL BAL - (GC)DA	-203	-----	-----	-----
162009	USE OF PRIOR YEAR UNOBL BAL - (BCA)DA	-7	-----	-----	-----
164009	USE OF PRIOR YEAR UNOBL BAL - (OSEC)DA	-290	-----	-----	-----
170016	USE OF PRIOR YEAR UNOBL BAL - (IG)DA	-916	-----	-----	-----
190043	USE OF PRIOR YEAR UNOBL BAL - (CP)DA	-81	-----	-----	-----
200014	USE OF PRIOR YEAR UNOBL BAL - (OMEI)DA	-13	-----	-----	-----
159561	USE OF PRIOR YEAR UNOBL BAL - (OPS)DA	-3,753	-----	-----	-----
159562	A-76 STUDIES	-----	-----	-----	-2,000
999090	TOTAL, DEPARTMENTAL ADMINISTRATION (NET)	164,243	254,398	212,614	177,814
999095	(OPERATING EXPENSES - NET)	158,266	244,423	204,370	170,652
999096	(PLANT AND CAPITAL EQUIPMENT - NET)	5,977	9,975	8,244	7,162

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
**97000	ALASKA POWER O&M				
70450	POWER MARKETING - ALASKA POWER ADMINISTRATION........	3,191	3,299	3,299	3,279
70703	USE OF PRIOR YEAR BALANCES - (CE)APA................	-165	-----	-----	-120
**97090	TOTAL, ALASKA POWER	3,026	3,299	3,299	3,159
70805	EFFECT OF PRIVATIZATION - APA.........................	-----	-----	-----	-----
70801	PRIV. - SALE OF ASSETS - APA(NON-ADD)................	-----	-----	(-176,000)	(-100,000)
**9467	TOTAL, ALASKA POWER..................................	3,026	3,299	3,299	3,159

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
997200	BONNEVILLE				
81006	POWER MARKETING - BONNEVILLE POWER ADMINISTRATION	165,000	260,400	260,400	136,000
81012	PERMANENT INDEFINITE BORROWING AUTHORITY(NON-ADD)	-----	-----	-----	-----
997290	TOTAL, BONNEVILLE POWER ADMIN	165,000	260,400	260,400	136,000
81055	EFFECT OF PRIVATIZATION - BPA (NON-ADD)	-----	-----	-----	-----
81053	EFFECT OF PRIVATIZATION - BPA	-----	-----	-----	-----
81056	PRIV. - SALE OF ASSETS - BPA(NON-ADD)	-----	-----	-----	-----
81057	TOTAL, BONNEVILLE POWER ADMINISTRATION	165,000	260,400	260,400	136,000

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DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
997400	SOUTHEASTERN O&M				
70470	POWER MARKETING - SOUTHEASTERN POWER ADMINISTRATION..	27,400	36,376	36,306	36,267
70710	USE OF PRIOR YEAR DEFERRALS..........................	-----	-----	-----	-----
997490	TOTAL, SOUTHEASTERN O&M..............................	27,400	36,376	36,306	36,267
70807	EFFECT OF PRIVATIZATION- SEPA........................	-----	-----	-----	-----
70802	PRIV. - SALE OF ASSETS - SEPA(NON-ADD)...............	-----	-----	-----	-----
999470	TOTAL, SOUTHEASTERN O&M..............................	27,400	36,376	36,306	36,267
997500	SOUTHEASTERN CONT. FUND				
70485	SOUTHEASTERN POWER - CONT. FUND......................	-----	-----	-----	-----
997590	TOTAL, SOUTHEASTERN CONT. FUND.......................	-----	-----	-----	-----

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
997800	SOUTHWESTERN O&M				
70400	POWER MARKETING - SOUTHWESTERN POWER ADMINISTRATION..	30,308	35,041	28,770	28,589
70634	USE OF PRIOR YEAR BALANCES CS (SWPA)...............	-13,660	-----	-----	-13,200
70787	SAVINGS FROM MANAGEMENT INITIATIVES - (CE)SWPA......	-----	-----	-----	-----
997890	TOTAL, SOUTHWESTERN O&M..............................	16,648	35,041	28,770	15,389
70809	EFFECT OF PRIVATIZATION- SWPA..........................	-----	-----	-----	-----
70803	PRIV. - SALE OF ASSETS - SWPA(NON-ADD)................	-----	-----	-----	-----
999476	TOTAL, SOUTHWESTERN O&M..............................	16,648	35,041	28,770	15,389
998000	SOUTHWESTERN CONT. FUND				
70500	SOUTHWESTERN POWER - CONT. FUND.......................	-----	1,200	-----	-----
998090	TOTAL, SOUTHWESTERN CONT. FUND........................	-----	1,200	-----	-----

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
998200	WESTERN AREA O&M				
80005	POWER MARKETING - WAPA O&M	292,997	351,712	297,376	295,928
80022	USE OF PRIOR YEAR BALANCES	-50,485	-----	-----	-----
80030	GENERAL REDUCTION	-----	-----	-----	-----
80037	TRANSFER FROM DOI	7,003	11,488	2,085	2,485
998290	TOTAL, WESTERN AREA O&M	249,515	363,200	299,461	298,413
80055	EFFECT OF PRIVATIZATION- WAPA	-----	-----	-----	-----
80057	PRIV. - SALE OF ASSETS - WAPA(NON-ADD)	-----	-----	-----	-----
80058	TOTAL, WESTERN AREA POWER ADMINISTRATION	249,515	363,200	299,461	298,413
998400	WESTERN AREA POWER - EMERGENCY FUND				
80015	WAPA EMERGENCY FUND	24	-----	-----	-----
998490	TOTAL, WAPA EMERGENCY FUND	24	-----	-----	-----
998600	COLORADO RIVER BASIN				
80010	COLORADO RIVER BASIN (NON-ADD)	(87,000)	(-84,000)	(84,000)	(84,000)
80056	EFFECT OF PRIVATIZATION- CRB	-----	-----	-----	-----
998690	TOTAL, COLORADO RIVER BASIN	-----	-----	-----	-----

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DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
995600	FERC SALARIES AND EXPENSES				
90010	OIL PIPELINE REGULATION	3,754	105,105	112,367	3,928
90020	NATURAL GAS REGULATION	46,623	-----	-----	49,089
90030	HYDRO POWER LICENSING	27,348	-----	-----	30,104
90040	ELECTRIC POWER REGULATION	22,275	-----	-----	23,639
90043	TOTAL, FERC	100,000	105,105	112,367	106,760
90067	REVENUES	-----	-105,105	-112,367	-----
90080	TOTAL, F E R C	100,000	-----	-----	106,760
90045	REQUIREMENT FOR FERS	-----	-----	-----	-----
90070	LESS PROPOSED PAY RAISE SUPPLEMENTAL	-----	-----	-----	-----
995690	TOTAL, FERC SALARIES AND EXPENSES	100,000	-----	-----	106,760

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
82060	NUCLEAR WASTE FUND				
82070	NUCLEAR WASTE FUND - OF...............................	360,000	1,171,800	468,832	448,832
82080	NUCLEAR WASTE FUND - PACE...........................	-----	-----	-----	-----
159011	NUCLEAR WASTE FUND....................................	-----	-----	-----	-----
82100	TOTAL, NUCLEAR WASTE FUND............................	360,000	1,171,800	468,832	448,832

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
996000	GEOTHERMAL RESOURCES				
70343	GEOTHERMAL RESOURCES DEVELOPMENT FUND	72	72	72	75
996090	TOTAL, GEOTHERMAL RESOURCES	72	72	72	75
999157	ALCOHOL FUELS				
70525	ALCOHOL FUELS	-----	-----	-----	48,500
70526	TRANSFER FROM GREAT PLAINS	-----	-----	-----	-48,500
70527	SUBTOTAL, ALCOHOL FUELS	-----	-----	-----	-----
994290	ALTERNATIVE FUELS PRODUCTION				
50447	ALTERNATIVE FUELS PRODUCTION - FE (AFP)	-----	-----	-----	-----
994291	TOTAL, ALTERNATIVE FUELS PRODUCTION	-----	-----	-----	-----
50448	CLEAN COAL TECHNOLOGY				
50449	CLEAN COAL TECHNOLOGY	50,000	500,000	500,000	525,000
50450	ADVANCE APPROP.(CCT) PERM (NON ADD)	-----	500,000	500,000	-----
50451	CLEAN COAL TECHNOLOGY (NON-ADD)	(149,100)	-----	-----	-----
50453	TOTAL, CLEAN COAL TECHNOLOGY	50,000	500,000	500,000	525,000

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
992500	FOSSIL ENERGY				
50010	COAL				
50015	CONTROL TECHNOLOGY & COAL PREPARATION				
50020	OP. EXP. & CAP. EQUIP..............................	43,620	43,787	29,713	31,487
50025	CONSTRUCTION..	-----	-----	-----	-----
		-------------	-------------	-------------	-------------
50030	TOTAL, CONTROL TECHNOLOGY & COAL PREPARATION.......	43,620	43,787	29,713	31,487
50035	ADV. RESEARCH & TECHNOLOGY DEV				
50040	OP. EXP. & CAP. EQUIP..............................	24,937	33,512	27,773	21,410
50045	CONSTRUCTION..	-----	-----	-----	-----
		-------------	-------------	-------------	-------------
50050	TOTAL, ADV. RESEARCH & TECHNOLOGY DEV..............	24,937	33,512	27,773	21,410
50075	COAL LIQUEFACTION				
50080	OP. EXP. & CAP. EQUIP..............................	27,129	13,687	10,298	10,298
50085	CONSTRUCTION..	-----	-----	-----	-----
		-------------	-------------	-------------	-------------
50090	TOTAL, COAL LIQUEFACTION...........................	27,129	13,687	10,298	10,298
50095	COMBUSTION SYSTEMS				
50100	OP. EXP. & CAP. EQUIP..............................	25,167	22,166	15,328	17,420
50105	CONSTRUCTION..	----	-----	-----	-----
50110	ADVANCE APPROP.-AFB (PERM).........................	-----	-----	-----	-----
		-------------	-------------	-------------	-------------
50115	TOTAL, COMBUSTION SYSTEMS..........................	25,167	22,166	15,328	17,420
50120	FUEL CELLS				
50125	OP. EXP. & CAP. EQUIP..............................	34,200	9,430	5,637	6,634
50130	CONSTRUCTION..	-----	-----	-----	-----
		-------------	-------------	-------------	-------------
50135	TOTAL, FUEL CELLS..................................	34,200	9,430	5,637	6,634
50140	HEAT ENGINES AND HEAT RECOVERY				
50145	OP. EXP. & CAP. EQUIP..............................	17,945	14,269	8,998	8,998
50150	CONSTRUCTION..	-----	-----	-----	-----
		-------------	-------------	-------------	-------------
50155	TOTAL, HEAT ENGINES AND HEAT RECOVERY..............	17,945	14,269	8,998	8,998
50160	UNDERGROUND COAL GASIFICATION				
50165	OP. EXP. & CAP. EQUIP..............................	2,777	1,425	271	271
50170	CONSTRUCTION..	-----	-----	-----	-----
		-------------	-------------	-------------	-------------
50175	TOTAL, UNDERGROUND COAL GASIFICATION...............	2,777	1,425	271	271

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
50180	MAGNETOHYDRODYNAMICS				
50185	OP. EXP. & CAP. EQUIP.	35,000	32,000	-----	-----
50190	CONSTRUCTION	-----	-----	-----	-----
50195	TOTAL, MAGNETOHYDRODYNAMICS	35,000	32,000	-----	-----
50200	SURFACE COAL GASIFICATION				
50205	OP. EXP. & CAP. EQUIP.	22,993	12,534	5,027	5,027
50210	CONSTRUCTION	-----	-----	-----	-----
50215	TOTAL, SURFACE COAL GASIFICATION	22,993	12,534	5,027	5,027
50230	SUBTOTAL, COAL	233,768	182,810	103,045	101,545
50235	GAS				
50240	UNCONVENTIONAL GAS RECOVERY				
50245	OP. EXP. & CAP. EQUIP.	10,534	2,217	1,734	1,734
50250	CONSTRUCTION	-----	-----	-----	-----
50255	TOTAL, UNCONVENTIONAL GAS RECOVERY	10,534	2,217	1,734	1,734
50270	SUBTOTAL - GAS	10,534	2,217	1,734	1,734
50275	PETROLEUM R&D				
50280	ADVANCED PROCESS TECHNOLOGY				
50285	OP. EXP. & CAP. EQUIP.	3,425	4,500	2,168	2,168
50290	CONSTRUCTION	-----	-----	-----	-----
50295	TOTAL, ADVANCED PROCESS TECHNOLOGY	3,425	4,500	2,168	2,168
50320	ENHANCED OIL RECOVERY				
50325	OP. EXP. & CAP. EQUIP.	16,535	18,500	17,483	16,983
50330	CONSTRUCTION	-----	-----	-----	-----
50335	TOTAL, ENHANCED OIL RECOVERY	16,535	18,500	17,483	16,983
50340	OIL SHALE				
50345	OP. EXP. & CAP. EQUIP.	9,504	7,400	1,035	1,035
50350	CONSTRUCTION	-----	-----	-----	-----
50355	TOTAL, OIL SHALE	9,504	7,400	1,035	1,035
50370	SUBTOTAL PETROLEUM	29,464	30,400	20,686	20,186

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DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 COMB REQUEST
50400	PROGRAM DIRECTION AND MANAGEMENT SUPPORT				
50405	HEADQUARTERS PROGRAM DIRECTION	14,037	18,457	11,515	9,707
50410	ETC PROGRAM DIRECTION	47,811	51,319	28,900	25,071
50412	FEDERAL INSPECTOR FOR THE ALASKA GAS PIPELINE	230	249	249	249
50413	TOTAL, PROGRAM DIRECTION & MANAGEMENT SUPPORT	62,078	70,025	40,664	35,027
50414	PLANT & CAPITAL EQUIPMENT				
50415	CAPITAL EQUIPMENT	480	1,500	-----	-----
50420	CONSTRUCTION	17,750	2,500	500	500
50411	FERS ADJUSTMENT	-----	-----	-----	-----
50425	TOTAL, PLANT & CAPITAL EQUIPMENT	18,230	4,000	500	500
50426	COOPERATIVE VENTURE R&D POOLS	-----	10,000	10,000	9,000
50467	TOTAL, FOSSIL ENERGY	354,076	299,452	176,629	167,992
50468	USE OF FY86 DEFERRAL - (FE)FE	-----	-----	-----	-----
50471	USE OF UNOBLIGATED BALANCES - FE (FE)	-6,205	-----	-----	-1,000
50469	FERS REESTIMATE - FE	-----	-----	-----	-----
50473	TRANSFER FROM FOSSIL ENERGY CONSTRUCTION	-----	-----	-----	-----
50470	GENERAL REDUCTION	-----	-----	-----	-----
50485	TRANSFER FROM ENERGY SEC. RES.	-20,896	-500	-517	-----
50490	PROGRAM OFFSET	-----	-----	-----	-----
50507	COOPERATIVE VENTURES - BACKOUT	-----	-----	-----	-----
50508	EMPLOYMENT FLOORS	-----	-----	-----	-----
50486	TRANS FROM FED. INSP. FOR ALASKA	-----	-----	-----	-----
50509	RESCISSIONS, DEFERRALS, SUPP	-----	-----	-----	-----
50510	TOTAL, FOSSIL ENERGY	326,975	298,952	176,112	166,992
992591	(OP. EXP. & CAP. EQUIP.)	309,225	296,452	175,612	166,492
992592	(CONSTRUCTION)	17,750	2,500	500	500

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
993500	NAVAL PETROLEUM AND OIL SHALE RESERVES				
50454	NAVAL PETROLEUM AND OIL SHALE RESERVES................	177,663	206,300	185,000	185,071
50492	USE OF PRIOR YEAR BALANCES,NPR......................	-18,000	-----	-15,956	-----
50493	FERS REESTIMATE - NPR................................	-----	-----	-----	-----
993590	TOTAL, NAVAL PETROLEUM AND OIL SHALE RESERVES.........	159,663	206,300	169,044	185,071
50511	EFFECT OF PRIVATIZATION- NPR.........................	-----	-201,600	-191,728	-----
50512	PRIV. - SALE OF ASSETS - NPR(NON ADD)................	-----	(-800,000)	(-800,000)	(-3,225,000)
999398	TOTAL, NAVAL PETROLEUM AND OIL SHALE RESERVES.........	159,663	4,700	-22,684	185,071

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
994000	CONSERVATION				
70344	TRANSPORTATION	51,828	54,778	30,323	28,382
70350	INDUSTRIAL	33,069	36,600	16,600	16,452
70360	BUILDINGS AND COMMUNITY SYSTEMS	34,640	41,300	15,074	14,950
70375	MULTI-SECTOR	29,003	38,100	24,350	24,157
70378	FACILITIES	6,000	-----	-----	-----
70380	COOPERATIVE VENTURE R&D POOLS	-----	-----	5,000	-----
70376	POLICY AND MANAGEMENT - CE(EC)	1,662	1,995	1,719	2,386
70620	GEN RED. FOR 125 FTEs IN SLAP	-----	-----	-----	-----
70770	EMPLOYMENT FLOORS/FERS	-----	-----	-----	-----
70381	SUBTOTAL, CONSERVATION RESEARCH AND DEVELOPMENT	156,202	172,773	93,066	86,327
70382	STATE AND LOCAL	212,095	17,675	8,605	8,605
70429	SUBTOTAL ENERGY CONSERVATION	368,297	190,448	101,671	94,932
70613	COOPERATIVE VENTURES - BACKOUT - CE	-----	-----	-5,000	-----
70614	USE OF PRIOR YEAR BALANCES, EC	-2,000	-----	-----	-5,573
70755	PETROLEUM OVERCHARGE (PODRA)	-56,780	-----	-----	-----
70590	FERS REESTIMATE	-----	-----	-----	-----
994090	TOTAL, ENERGY CONSERVATION	309,517	190,448	96,671	89,359

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
995200	ECONOMIC REGULATION				
100018	FUELS CONVERSION	585	356	356	356
100060	COMPLIANCE	13,038	12,920	12,511	12,511
100082	NATURAL GAS & ELECTRICITY	2,079	2,373	2,265	2,265
100120	PROGRAM ADMINISTRATION	697	712	712	712
100121	FERS REESTIMATE - ERA	-----	-----	-----	-----
100405	OFFICE OF HEARINGS AND APPEALS	5,166	5,371	4,928	4,928
100406	FERS REESTIMATE	-----	-----	-----	-----
995290	TOTAL, ECONOMIC REGULATION	21,565	21,732	20,772	20,772

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
995205	EMERGENCY PREPAREDNESS				
140205	ENERGY EMERGENCIES	6,172	7,584	6,048	6,154
140206	FERS REESTIMATE	-----	-----	-----	-----
995210	TOTAL,EMERGENCY PREPAREDNESS	6,172	7,584	6,048	6,154

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
50455	STRATEGIC PETROLEUM RESERVE				
50456	STRATEGIC PETROLEUM RESERVE..........................	164,162	173,549	173,517	173,421
50457	FERS REESTIMATE - SPR................................	-----	-----	-----	-----
50458	SUBTOTAL, STRATEGIC PETROLEUM RESERVE..................	164,162	173,549	173,517	173,421
994400	STRATEGIC PETROLEUM ACCOUNT				
50461	STRATEGIC PETROLEUM - 50K BARRELS....................	438,744	764,310	764,310	333,555
50462	DEFENSE PETROLEUM INVENTORY..........................	-----	-----	-----	207,525
50463	STRATEGIC PETROLEUM ADDITIONAL 50K BARRELS..........	-----	-----	-----	476,827
50466	SUBTOTAL, STRATEGIC PETROLEUM ACCOUNT..................	438,744	764,310	764,310	1,017,907

QUESTION FROM SENATOR McCLURE

QUESTION 4: Would you provide for the record a table by appropriations account indicating —

a. any assumptions regarding carryover of fiscal year 1988 appropriations into fiscal year 1989?

b. any proposed or anticipated supplemental appropriations?

ANSWER: The fiscal year 1989 budget assumes the following carryover of unobligated balances from fiscal year 1988:

Appropriation	Anticipated Carryover from FY 1988 into FY 1989 ($ in thousands)
Departmental Administration	$ 30,113
Alaska Power Administration	120
Southwestern Power Administration	13,200
Fossil Energy Research & Development	1,000
Conservation Research & Development	5,573
Atomic Energy Defense Activities	43,000

The unobligated carryover will be used to offset FY 1989 budget requirements.

The Department does not expect to request supplemental appropriations this year. Any unanticipated funding requirements will be satisfied within available funds.

QUESTION FROM SENATOR JAMES A. McCLURE

Question 5: Would you provide for the record a list of any assumptions in the President's proposed budget that require legislation? In each case would you--

a. provide a statement of purpose;

b. provide the proposed language (if available) or indicate if, or when, the Administration intends to transmit such language to the Congress; and

c. indicate whether, in the judgment of the Administration, such legislation would be sought from the Energy and Natural Resources Committee or as a rider on an appropriations act.

Answer: The following is a list of assumptions contained in the Department of Energy portion of the President's FY 1989 Budget Request that require legislation:

1. NPR Divestiture

°This proposal would authorize the sale of the Naval Petroleum Reserves Numbered 1 and 3

°This proposal was submitted to Congress on December 10, 1987, and referred to the Committee on Armed Services

2. APA Divestiture

°This proposal would authorize the sale of the Alaska Power Administration

°The Department plans to submit this proposal to Congress this Spring after negotiations with the State of Alaska and other parties are completed; we expect that it will be referred to the Committee on Energy and Natural Resources

3. UMTRA Program Extension

°This proposal would

-- extend the authority to perform remedial actions under the Uranium Mill Tailings Radiation Control Act of 1978

-- permit the Secretary of the Interior to transfer certain lands to the Department

°The Department submitted this proposal to the Congress on November 20, 1987; it has been introduced as S. 1991 and referred to the Committee on Energy and Natural Resources

4. Isotope Revolving Fund

°This proposal would establish a revolving fund for necessary expenses of activities related to the production, distribution and sale of isotopes

°The Administration submitted this proposal with the President's FY 1989 Budget Request; it appears on page I-J17 of the Budget Appendix. We expect that it will be referred to the Committee on Appropriations.

5. Alcohol Fuels Loan Guarantees

°This proposal would

-- permit receipts derived from the sale of assets in connection with the Department's defaulted alcohol fuels guaranteed loans to be deposited in the Biomass Energy Development account

-- permit the use of unobligated Alternative Fuels Production account funds to honor defaults and pay associated costs of the Department's alcohol fuels loan guarantee program

°The Administration submitted this proposal with the President's FY 1989 Budget Request; it appears on page I-J28 of the Budget Appendix. We expect that it will be referred to the Committee on Appropriations.

6. Repeal of Personnel Floors

°This proposal would repeal the mandatory personnel floors, established by law, for the Office of the Assistant Secretary for Fossil Energy and the Office of the Assistant Secretary for Conservation and Renewable Energy.

°The Administration submitted this proposal with the President's FY 1989 Budget Request; it appears on page I-J28 of the Budget Appendix. We expect that it will be referred to the Committee on Appropriations.

QUESTIONS FROM SENATOR MCLURE

QUESTION 6: What positions within the Department that require confirmation are currently vacant or occupied by individuals in an acting capacity?

ANSWER: The following positions that require Senate confirmation are currently vacant:

General Counsel

Assistant Secretary (Defense Programs)

Administrator, Economic Regulatory Administration

Director, Civilian Radioactive Waste Management

Director, Energy Research

Deputy Inspector General*

In each case, except for the Deputy Inspector General position, the principal deputy is carrying out his responsibility to perform the functions of the listed position in the absence of a Presidential appointee.

*Legislation has been introduced to abolish this position.

QUESTIONS FROM SENATOR McCLURE

7. **Question:** Would you provide for the record an updated status report on the ERA prelitigation cases identified in your September 12, 1986, report to the House committee on Energy and Commerce.

Answer: The following is the current status of those ERA prelitigation cases:

Firms (# cases)	Status
Enron (1)	PRO issued--no Federal Register notice
Howell Industries (1)	PRO in draft
Oasis Petroleum (1)	PRO's issued--no Federal Register notice
Phillips Petroleum (1)	CO executed but not final
Salomon (1)	Case partially settled; remainder in audit
Tesoro (3)	PRO issued--no Federal Register notice on one case; two PRO's in draft
United Operating and United Pipeline (1)	PRO prepared and signed, but service currently impossible
Western Refining (1)	Awaiting documents from Grand Jury

QUESTIONS FROM SENATOR MCCLURE

BUDGET ASSUMPTIONS

Question 8a. The Omnibus Budget Reconciliation Act of 1986 provided for the identification and disbursement of petroleum overcharge restitutionary amounts.

What are the budget assumptions in the budget regarding the disbursement of such monies to the Federal government and others?

Answer: The FY 1989 Budget Request for the State and Local Assistance Programs is based on the assumption that petroleum overcharge restitution funds are available for these programs. The States have allocated less than half of the $3.5 billion of overcharge funds they have received in the last five years, and approximately $250 million will be distributed to the States in FY 1989. It is on this basis that it is not necessary to request new budget authority or appropriated funds for these activities.

QUESTION FROM SENATOR JAMES A. McCLURE

Question 8b: Would you provide for the record a copy of the Secretary's determination (and justification thereof) of excess amounts to be used for indirect restitution pursuant to section 3003(c) of the Omnibus Budget Reconciliation Act of 1986?

Answer: The Secretary of Energy has delegated the responsibility for this determination to the Office of Hearings and Appeals. Attached is the Office of Hearings and Appeals' determination, with justification, of the amount of oil overcharge funds in FY 1988 that will not be required for restitution to injured parties. This determination was published in the Federal Register on November 13, 1987. See 52 Fed. Reg. 43,657 (1987).

DEPARTMENT OF ENERGY
OFFICE OF HEARINGS AND APPEALS

Determination of Excess Petroleum Violation Escrow Funds for Fiscal Year 1988

AGENCY:	Office of Hearings and Appeals Department of Energy
ACTION:	Notice of Determination of Excess Amount of Petroleum Violation Escrowed Amounts Pursuant To the Petroleum Overcharge Distribution and Restitution Act of 1986
SUMMARY:	The Petroleum Overcharge Distribution and Restitution Act of 1986 requires the Secretary of Energy to determine annually the amount of oil overcharge funds held in escrow that is in excess of the amount needed to make restitution to injured parties and to meet other commitments. Notice is hereby given that $56,779,537.32 of the amounts currently in escrow is determined to be excess funds for fiscal year 1988 and will be made available to state governments for use in specified energy conservation programs.
FOR FURTHER INFORMATION CONTACT:	Thomas O. Mann, Deputy Director Roger Klurfeld, Assistant Director Office of Hearings and Appeals United States Department of Energy 1000 Independence Avenue, S.W. Washington, D.C. 20585 (202) 586-2094 (Mann); 586-2383 (Klurfeld)

SUPPLEMENTARY INFORMATION:

The Petroleum Overcharge Distribution and Restitution Act of 1986 (hereinafter "PODRA"), contained in Title III of the Omnibus Budget Reconciliation Act of 1986, Pub. L. No 99-509, establishes certain procedures for the disbursement of oil overcharge funds collected by the Department of Energy pursuant to the Emergency Petroleum Allocation Act of 1973

("EPAA") or the Economic Stabilization Act of 1970 ("ESA"). These funds are moneys obtained to remedy actual or alleged violations of such Acts.

PODRA requires the Department of Energy, through the Office of Hearings and Appeals, to conduct proceedings under 10 C.F.R. Part 205, Subpart V, to refund these overcharge moneys to persons injured by violations of the EPAA and the ESA. In addition, the Secretary of Energy must determine annually the amount of oil overcharge funds that will not be required for restitution to injured parties in these Subpart V proceedings and make it available to state governments for use in four energy conservation programs. The determination is due within 45 days after the beginning of each fiscal year. PODRA, section 3003(c). The Secretary has delegated this responsibility to the Office of Hearings and Appeals. See 51 Fed. Reg. 43964 (December 5, 1986).

Notice is hereby given that based on currently available information, $56,779,537.32 is in excess of the amount that is needed to make restitution to injured persons.

To arrive at that figure, the Office of Hearings and Appeals has reviewed all accounts in which moneys covered by PODRA are deposited. Funds eligible for distribution under PODRA in the current fiscal year consist entirely of funds in the

DOE Deposit Fund Escrow Account which are derived from alleged violations of refined petroleum product or natural gas liquids regulations. PODRA, section 3002. As of September 30, 1987, the Office of Hearings and Appeals had jurisdiction in its refund proceedings over $318,876,408.11 subject to PODRA. In addition, a relatively small amount of funds is subject to the control of the Economic Regulatory Administration.

The Office of Hearings and Appeals has employed the following methodology to determine the amount in excess of that required for direct restitution. For each account subject to PODRA, we have determined the eligible amount of principal and accrued interest earned as of the end of fiscal year 1987. Keeping in mind that provision of the legislation which directs that "primary consideration [be given] to assuring that at all times sufficient funds (including a reasonable reserve) are set aside for making [direct] restitution," and in accordance with our prior practice, in major refiner proceedings where refund claims may not yet be filed, we have reserved 75 percent of the funds for direct restitution to injured persons. For proceedings in which all claims have been considered or in which no claims have been filed and the deadline for filing claims has passed, no reserve is maintained. In proceedings in which refund claims are pending, we have on a case-by-case basis examined pending

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

Line No.	ACCOUNT TITLE	FY 1988 IN FY89 STR B/A	FY 1989 A/S REQ B/A	FY 1989 DEPT REQ B/A	FY 1989 CONG REQUEST
994800	ENERGY INFORMATION ACTIVITIES				
110001	NATIONAL ENERGY INFORMATION SYSTEM:				
110002	OIL AND GAS	12,625	13,414	13,186	13,186
110004	COAL, NUCLEAR, ELECTRIC AND ALTERNATE FUELS	4,809	5,016	4,916	4,916
110006	ENERGY MARKETS AND END USE	4,032	5,238	5,238	5,238
110008	AUTOMATED DATA PROCESSING SERVICES STAFF	7,413	7,054	6,653	6,653
110010	ENERGY INFORMATION CENTER	628	650	650	650
110012	STATISTICAL STANDARDS	1,090	1,786	1,130	1,130
110014	PROGRAM DIRECTION/FERS	20,591	21,487	21,476	21,025
110016	SUBTOTAL, NATIONAL ENERGY INFORMATION SYSTEM	51,188	54,645	53,249	52,798
110018	POLICY AND MANAGEMENT	10,210	10,382	10,091	10,058
110019	FERS REESTIMATE	-----	-----	-----	-----
994890	TOTAL, ENERGY INFORMATION ACTIVITIES	61,398	65,027	63,340	62,856

claims, and established reserves sufficient to pay the entire amount of all claims. The amount of those reserves also includes all refunds ordered by the Office of Hearings and Appeals since September 30, 1987. Interest accrued after September 30, 1986 in accounts that were closed in the fiscal 1987 PODRA determination (51 Fed. Reg. 43964) is part of the "excess" for fiscal 1988.

In those proceedings where the escrowed amounts have been designated, prior to the enactment of PODRA, for disbursement to specific persons or classes of persons as indirect restitution (i.e. subjected to "second stage" refund proceedings), those amounts have been excluded from the determination of "excess" amounts in accordance with section 3002(c)(3) of PODRA. An erroneous allocation between crude oil and product funds was made in one account during the fiscal 1987 PODRA determination, and the amount of excess funds available from that account was overstated. Those funds will be restored and that amount ($198,349.76) excluded from the excess funds for fiscal 1988. No "other commitments" are reflected in those reserves. Id.

The total escrow account equity allocated to refined products and natural gas liquids is $318,876,408.11. The total amount needed as reserves for direct restitution in all cases eligible for distribution under PODRA in fiscal 1988 is

$262,096,870.79. That total amount of reserves was subtracted from the total escrow account equity allocated to refined products and natural gas liquids, and the remainder, $56,779,537.32, is the amount in fiscal year 1988 that is "in excess" of the amount that will be needed to make restitution to injured persons. Appendix A sets forth for each case within the jurisdiction of the Office of Hearings and Appeals the total product equity eligible for distribution under PODRA, amount reserved for direct restitution, and excess amount. Appendix B reflects information supplied by the Economic Regulatory Administration regarding cases subject to PODRA under its jurisdiction.

Accordingly, $56,779,537.32 will be transferred to a separate account within the United States Treasury and made available to the states for use in the four designated energy conservation programs in the manner prescribed by the Act.

Date: NOV 6 1987

George B. Breznay
Director
Office of Hearings and Appeals

APPENDIX A

APPENDIX: Determination of Excess Funds as of Sept. 30, 1987

Name	OHA Case Number	Consent Order Number	Total Product Equity As Of Sept. 30, 1987	Reserve For Claimants And Litigation	Funds Available Under PODRA For FY88
ALEMANY CHEVRON SERVICE CENTER	KEF-0023	999K90059Z	$3,234.65	$3,234.65	$0.00
ALLIED MATERIALS CORP & EXCEL	KEF-0200	660S00302Z	$143,964.17	$0.00	$143,964.17
AMINOIL, U.S.A., INC.	KEF-0007	740V01259Y	$14,121,002.78	$14,121,002.78	$0.00
AMTEL, INC.	KEF-0027	720H00552Z	$1,075,559.39	$1,075,559.39	$0.00
ANDERSON, R.W.	KEF-0066	641T00147Y	$334,775.05	$334,775.05	$0.00
APCO OIL CORPORATION	KEF-0008	660S00632Y	$542,515.09	$242,515.09	$300,000.00
APPALACHIAN FLYING SERVICE INC	KEF-0028	432K00435Z	$10,408.05	$0.00	$10,408.05
ARAPAHO PETROLEUM, INC	KEF-0231	710V03019Z	$192,275.63	$0.00	$192,275.63
ARKANSAS LOUISIANA GAS COMPANY	KEF-0201	641S00255Z	$2,563,635.47	$888,286.91	$1,675,348.56
ARKANSAS VALLEY PETROLEUM	KEF-0029	660H10655Z	$47,462.43	$0.00	$47,462.43
ARKLA CHEMICAL CORPORATION	KEF-0030	641H00364Z	$18,317.40	$420.40	$17,897.00
ATLANTIC RICHFIELD COMPANY	KEF-0591	RARH00001Z	$40,350,555.81	$40,350,555.81	$0.00
A. TARRICONE INC	KEF-0177	240H00291Z	$17,546.15	$0.00	$17,546.15
BAK LTD	KEF-0034	320H00043Z	$466,596.02	$466,596.02	$0.00
BEACON OIL COMPANY	KEF-0203	910S00008Z	$2,320,800.02	$2,320,800.02	$0.00
BETTS, KEN (PINOLE,MONT.,BUBB)	KEF-0514	999K90040Z	$28,147.69	$0.00	$28,147.69
BOX, CLOYCE K.	KEF-0041	600H00037Z	$545,487.69	$0.00	$545,487.69
BUD'S EXXON SERVICE	KEF-0511	999K90038Z	$1,657.12	$0.00	$1,657.12
BUTLER FUEL CORPORATION	KEF-0094	110E00421Z	$51,502.47	$51,502.47	$0.00
CAR WASH SERVICES	KEF-0516	999K90047Z	$1,006.68	$0.00	$1,006.68
CLEAN MACHINE, INC	KEF-0097	999K90079Z	$22,611.84	$22,611.84	$0.00
CONOCO, INC.	KEF-0010	RCOA00001Y	$1,495,483.14	$1,495,483.14	$0.00
CONSUMERS OIL COMPANY	KEF-0055	930H00097Z	$233,919.75	$0.00	$233,919.75
CRANSTON OIL SERVICE CO., INC	KEF-0029	111K00123Z	$67,477.37	$67,477.37	$0.00
CROWN CENTRAL PETROLEUM CORP	KEF-0044	RCWA00000Z	$6,331,915.17	$6,331,915.17	$0.00
CRYSTAL OIL COMPANY	KEF-0204	641S00098Z	$666,761.62	$0.00	$666,761.62
C.K. SMITH & COMPANY, INC	KEF-0172	111H00028Z	$557,904.11	$278,952.05	$278,952.06
DALCO PETROLEUM INC	KEF-0060	660T00642Z	$48,351.34	$0.00	$48,351.34
DORCHESTER GAS CORPORATION	KEF-0559	670S00113Z	$2,438,340.48	$1,305,341.04	$1,132,999.44
EAGLE PETROLEUM CO	KEF-0243	710V03025Z	$39,522.39	$0.00	$39,522.39
EARL'S BROADMOOR TEXACO	KEF-0566	640Z00357Z	$3,251.29	$0.00	$3,251.29
EARTH RESOURCES CO	KEF-0205	431S00341Z	$471,554.93	$471,554.93	$0.00
EASTERN OF NEW JERSEY, INC	KEF-0065	240H00441Z	$376,922.20	$0.00	$376,922.20
EASTERN OIL COMPANY	KEF-0085	412H00040Z	$223,353.40	$223,353.40	$0.00
EDG, INC.	KEF-0003	930S00173Z	$1,812,796.41	$1,812,796.41	$0.00
ELIAS OIL COMPANY	KEF-0022	412H00105Z	$121,999.94	$121,999.94	$0.00
ELM CITY FILLING STATIONS, INC	KEF-0067	150H00126Z	$247,968.33	$247,968.33	$0.00
EMPIRE GAS CORPORATION	KEF-0048	720T00521Z	$1,033,668.52	$1,033,668.52	$0.00
EVETT OIL COMPANY	KEF-0020	400H00221Z	$69,444.14	$69,444.14	$0.00
EXXON CORPORATION	KEF-0087	REXL00201Z	$29,831,382.62	$22,373,536.96	$7,457,845.66
FARSTAD OIL COMPANY	KEF-0567	850H00018Z	$31,402.91	$3,402.91	$28,000.00
FERRELL COMPANIES, INC	KEF-0587	710T00075Z	$44,007.90	$4,007.90	$40,000.00
GARY ENERGY CORPORATION	KEF-0245	810V00003Z	$348,908.25	$0.00	$348,908.25
GCO MINERALS COMPANY	KEF-0570	MGCP00001Z	($191,849.86)	$6,499.90	($198,349.76)
GETTY OIL COMPANY	KEF-0209	RGEA00001Z	$35,497,214.56	$28,847,854.56	$6,649,360.00
GIBBS INDUSTRIES, INC	KEF-0079	110H00494Z	$71,061.43	$71,061.43	$0.00
GOOD HOPE REFINERIES INC	KEF-0211	150S00154Z	$256,079.22	$174,219.89	$81,859.33
GULF OIL CORPORATION	KEF-0590	RGFA00001Z	$38,229,688.11	$38,229,688.11	$0.00
GULF OIL CORP	DFF-0001	MOOR00007Y	$31,901,097.80	$25,392,184.66	$6,508,913.14
GULL INDUSTRIES, INC	KEF-0086	010H00036Z	$185,768.72	$0.00	$185,768.72
GULL INDUSTRIES, INC	KEF-0084	010H00357Z	$40,612.01	$0.00	$40,612.01

APPENDIX: Determination of Excess Funds as of Sept. 30, 1987

Name	OHA Case Number	Consent Order Number	Total Product Equity As Of Sept. 30, 1987	Reserve For Claimants And Litigation	Funds Available Under PODRA For FY88
GULL INDUSTRIES, INC.	KEF-0085	800S00001Z	$860,192.26	$0.00	$860,192.26
HICKS OIL & HICKS GAS CO, INC	KEF-0091	570E00128Z	$29,661.10	$0.00	$29,661.10
HOWARD OIL COMPANY	KEF-0008	240H00280Z	$14,188,290.01	$10,641,217.51	$3,547,072.50
HOWELL OIL CORP. / QUINTANA	KEF-0212	610S00068Z	$1,498,712.25	$150,000.25	$1,348,712.00
HUSKY OIL COMPANY OF DELAWARE	KEF-0213	820S00007Z	$252,854.97	$252,854.97	$0.00
H.C. LEWIS OIL CO.	KEF-0115	340H00493Z	$15,263.28	$0.00	$15,263.28
INDIAN OIL CO., INC.	KEF-0095	132H00243Z	$52,793.28	$0.00	$52,793.28
INLAND USA, INC.	KEF-0096	720H00563Z	$274,112.20	$0.00	$274,112.20
INMAN OIL CO.	KEF-0097	720H00557Z	$17,315.76	$5,865.76	$11,450.00
JAY OIL COMPANY	KEF-0101	6C1H00209Z	$61,260.77	$61,260.77	$0.00
KELLER OIL COMPANY, INC.	KEF-0103	720H00598Z	$50,619.27	$50,619.27	$0.00
KENT OIL & TRADING COMPANY	KEF-0578	940X00232Z	$63,680.57	$3,863.96	$59,816.61
KEY OIL COMPANY	KEF-0106	430H00477Z	$41,290.67	$8,290.67	$33,000.00
KING & KING ENTERPRISES	KEF-0108	710H02500Z	$45,536.80	$18,536.80	$27,000.00
LA GLORIA OIL AND GAS CO.	KEF-0210	641S00234Z	$769,917.73	$48,365.73	$721,552.00
LAKES GAS CO., INC.	KEF-0112	510E00134Z	$4,496.86	$0.00	$4,496.86
LEATHERS OIL CO., INC.	KEF-0113	000H00426Z	$16,793.45	$0.00	$16,793.45
LEE GARRETT CHEVRON	KEF-0040	999K90057Z	$6,967.59	$6,967.59	$0.00
LEONARD E. BELCHER, INC.	KEF-0586	151H00003Z	$10,058.92	$0.00	$10,058.92
LEO'S WINSTEAD'S INC.	KEF-0114	710H01376Z	$61,548.41	$36,548.41	$25,000.00
LEWTEX OIL & GAS CORP.	KEF-0033	6D0V00020Y	$393,317.49	$0.00	$393,317.49
LITTLE AMERICA REFINING CO.	KEF-0215	[illegible]00012Z	$7,392.11	$0.00	$7,392.11
LOCKHEED AIR TERMINAL INC.	KEF-0117	930H00199Z	$199,217.66	$0.00	$199,217.66
LOWE OIL COMPANY	KEF-0118	710H01379Z	$56,756.27	$0.00	$56,756.27
LUCIA LODGE ARCO	KEF-0119	910K00133Z	$13,551.28	$1,051.28	$12,500.00
LUKE BROTHERS INC.	KEF-0120	660E00075Z	$6,652.97	$0.00	$6,652.97
MACMILLAN RING-FREE OIL CO.	KEF-0506	960S00053Z	$222,552.22	$222,552.22	$0.00
MALCO INDUSTRIES INC.	KEF-0121	530H00435Z	$11,376.24	$0.00	$11,376.24
MAPCO, INC.	KEF-0258	740V01246Z	$146,460.58	$1,199.63	$145,260.95
MARATHON PETROLEUM COMPANY	KEF-0021	RMNA00001Z	$6,573,385.14	$6,573,385.14	$0.00
MARINE PETROLEUM / MARS OIL	KEF-0122	720H00567Z	$190,723.29	$30,723.29	$160,000.00
MARLEN L. KNUTSON DIST. INC.	KEF-0110	000H00422Z	$43,858.33	$43,858.33	$0.00
MARTIN OIL COMPANY	KEF-0124	910T00120Z	$110,821.51	$110,821.51	$0.00
MARTIN OIL SERVICE, INC.	KEF-0123	570H00200Z	$90,263.02	$90,263.02	$0.00
MAXWELL OIL CO.	KEF-0125	000H00425W	$9,974.75	$9,974.75	$0.00
MCCLEARY OIL CO., INC.	KEF-0127	310H00439Z	$48,129.61	$3,316.61	$44,813.00
MCCLURE OIL COMPANY	KEF-0009	660E00083Z	$16,785.56	$16,785.56	$0.00
MCCLURE'S SERVICE STATION	KEF-0128	340H00486Z	$2,165.25	$0.00	$2,165.25
MISSOURI TERMINAL OIL CO.	KEF-0131	720H00562Z	$13,161.08	$0.00	$13,161.08
MOBIL OIL CORPORATION	KEF-0508	RMOA00001Z	$16,204,632.56	$9,593,561.29	$6,611,071.27
MOYLE PETROLEUM CO.	KEF-0133	810H00300Z	$834.49	$0.00	$834.49
MURPHY OIL CORPORATION	KEF-0095	RMUB01983Z	$7,336,955.38	$5,502,716.53	$1,834,238.85
NATIONAL PROPANE CORP.	KEF-0135	270T00002Z	$17,927.89	$10,927.89	$7,000.00
NAVAJO REFINING COMPANY	KEF-0217	672S00136Z	$49,849.50	$49,849.50	$0.00
NORTHEAST PETROLEUM INDUSTRIES	KEF-0137	110H00334Z	$602,187.81	$602,187.81	$0.00
NORTHEAST PETROLEUM INDUSTRIES	KEF-0580	6C0X00241Z	$1,632,838.47	$1,632,838.47	$0.00
NORTHEAST PETROLEUM, INC.	KEF-0138	120H00491Z	$732,202.21	$332,202.21	$400,000.00
NORTHWEST PIPELINE CORP.	KEF-0264	710V03015Z	$704,300.63	$20,000.00	$684,300.63
OCEANA TERMINAL CORP., ET AL	KEF-0142	240H00361Z	$201,946.29	$11,946.29	$190,000.00
ONEOK, INC.	KEF-0571	740V01406Z	$922,532.98	$6,314.00	$916,218.98
O'CONNELL OIL CO.	KEF-0141	110H00513Z	$7,348.86	$5,348.86	$2,000.00

APPENDIX Determination of Excess Funds as of Sept. 30, 1987

Name	OHA Case Number	Consent Order Number	Total Product Equity As Of Sept. 30, 1987	Reserve For Claimants And Litigation	Funds Available Under PODRA For FY88
PACER OIL CO. OF FLORIDA, INC	KEF-0143	412H00172Z	$22,045.36	$18,245.36	$3,800.00
PACIFIC NORTHERN OIL	KEF-0144	010H00028Z	$31,886.96	$18,886.96	$13,000.00
PANHANDLE EASTERN (CENTURY)	KEF-0041	710V02006Y	$79,064.62	$79,064.62	$0.00
PARMAN OIL CORPORATION	KEF-0145	430H00219Z	$38,069.46	$0.00	$38,069.46
PASCO PETROLEUM CO., INC.	KEF-0146	000H00442Z	$82,646.50	$0.00	$82,646.50
PEDERSEN OIL, INC.	KEF-0147	000H00418Z	$15,073.66	$15,073.66	$0.00
PERTA OIL MARKETING CORP.	KEF-0148	930H00088Z	$204,900.36	$0.00	$204,900.36
PETERSON PETROLEUM INC	KEF-0149	240H00491Z	$4,138.35	$0.00	$4,138.35
PETROLANE-LOMITA GASOLINE CO	KEF-0269	940V00195Z	$49,710.65	$49,710.65	$0.00
PETROLEUM HEAT & POWER CO, INC	KEF-0150	110H00530Z	$358,061.21	$100,313.21	$257,748.00
PETROLEUM SALES/SERVICE INC.	KEF-0151	340H00488Z	$16,130.16	$0.00	$16,130.16
PLACID OIL COMPANY	KEF-0007	6D0S00005Z	$1,843,698.46	$1,843,698.46	$0.00
PLAQUEMINES OIL SALES CORP	KEF-0039	640H00174Z	$641,335.78	$641,335.78	$0.00
PLATEAU, INC.	KEF-0272	733V02013Z	$6,079.53	$0.00	$6,079.53
POINT LANDING INC.	KEF-0152	640H00175Z	$120,657.32	$120,657.32	$0.00
PORT OIL COMPANY INC	KEF-0153	420H00278Z	$6,771.61	$0.00	$6,771.61
POST PETROLEUM CO	KEF-0154	910H00145Z	$2,205.51	$0.00	$2,205.51
POWER PAK CO., INC.	KEF-0155	610H10452Z	$114,739.56	$114,739.56	$0.00
POWER TEST PETROLEUM DIST.	KEF-0042	240H00499Z	$442,152.11	$442,152.11	$0.00
PRIDE REFINING, INC.	KEF-0218	6D0S00036Z	$283,636.01	$0.00	$283,636.01
PROPANE GAS & APPLIANCE CO	KEF-0156	420E00206Z	$13,757.51	$0.00	$13,757.51
PYROFAX GAS CORPORATION	KEF-0157	641T00099Z	$3,321,906.69	$3,321,906.69	$0.00
QUAKER STATE OIL REFINING CORP	KEF-0219	340S00352Z	$2,633,393.78	$0.00	$2,633,393.78
QUARLES PETROLEUM, INC	KEF-0158	N00H00905Z	$13,904.65	$13,904.65	$0.00
RAMOS OIL CO., INC	KEF-0159	910H00144Z	$11,053.73	$0.00	$11,053.73
RESOURCES EXTRACTION & PROCESS	KEF-0574	740V01409Z	$9,020.86	$0.00	$9,020.86
REYNOLDS OIL CO	KEF-0164	810H00324Z	$1,948.58	$0.00	$1,948.58
RICHARDSON AYERS JOBBER, INC	KEF-0166	640H00354Z	$19,435.59	$19,435.59	$0.00
SABER ENERGY, INC	KEF-0220	6D0S00037Z	$1,310,271.12	$1,310,271.12	$0.00
SAUVAGE GAS COMPANY, INC	KEF-0024	710H06008Z	$442,666.79	$442,666.79	$0.00
SHELL OIL COMPANY	KEF-0093	RSRA00001Z	$20,920,371.97	$15,690,278.98	$5,230,092.99
SID RICHARDSON CARBON & GAS	KEF-0022	6D0V00025Y	$427,119.84	$44,898.44	$382,221.40
SIGMOR CORPORATION	KEF-0581	6D0S00091Z	$40,962.01	$20,332.17	$20,629.84
SOUTH HAMPTON REFINING	KEF-0222	6E0S00002Z	$150,644.51	$0.00	$150,644.51
SOUTHERN UNION COMPANY	KEF-0223	673S00336Z	$61,035.04	$0.00	$61,035.04
STEVE'S EXXON	KEF-0550	999K90036Z	$2,649.50	$0.00	$2,649.50
STINNES INTER OIL INC.	KEF-0174	240H00519Z	$18,244.60	$0.00	$18,244.60
ST. JAMES RESOURCES CORP	KEF-0100	110H00487Z	$68,624.79	$0.00	$68,624.79
SUBURBAN PROPANE GAS CORP.	KEF-0038	733V02010Z	$1,963,619.06	$1,472,714.29	$490,904.77
SWIFTY OIL COMPANY INC.	KEF-0175	550H00337Z	$16,729.95	$0.00	$16,729.95
TENNECO OIL COMPANY	KEF-0073	RTNA00001Y	$192,883.69	$136,216.56	$56,667.13
TEXAS GAS & EXPLORATION	KEF-0274	6E0V00015Z	$27,843.81	$0.00	$27,843.81
THRIFTYMAN, INC	KEF-0018	610H10449Z	$152,132.57	$152,132.57	$0.00
TIPPERARY CORP.	KEF-0277	670V00323Z	$27,841.42	$0.00	$27,841.42
TOTAL PETROLEUM, INC.	KEF-0133	540S00227Z	$2,404,114.88	$2,404,114.88	$0.00
TRESLER OIL COMPANY	KEF-0019	530H00449Z	$168,904.94	$2,351.00	$166,553.94
TRUE COMPANIES, THE	KEF-0557	733V02019Z	$3,115,709.61	$3,115,709.61	$0.00
UNION TEXAS PETROLEUM CORP	KEF-0009	6E0S00075Y	$224,241.05	$0.00	$224,241.05
UPG, INC.	KEF-0026	641S00123Z	$496,049.90	$248,024.95	$248,024.95
U.S.A. PETROLEUM, INC.	KEF-0500	960S00093Z	$60,951.22	$7,284.46	$53,666.76
WELLEN OIL, INC.	KEF-0384	240H00071Z	$33,333.88	$0.00	$33,333.88

APPENDIX: Determination of Excess Funds as of Sept. 30, 1987

Name	OHA Case Number	Consent Order Number	Total Product Equity As Of Sept. 30, 1987	Reserve For Claimants And Litigation	Funds Available Under PODRA For FY88
WHITE PETROLEUM INC.	HEF-0196	550S00317Z	$651.38	$0.00	$651.38
WINSTON REFINING COMPANY	HEF-0589	6D0S00006Z	$132,127.18	$132,127.18	$0.00
WITCO CHEMICAL CORPORATION	HEF-0227	240S00034Z	$3,132,788.40	$3,132,788.40	$0.00
WORLD OIL COMPANY	HEF-0005	960S00104Z	$2,389,347.70	$2,389,347.70	$0.00
PRODUCT TRACKING - PODRA		999DOE003W	$270,385.35	$0.00	$270,385.35
TOTALS			$318,876,408.11	$262,096,870.79	$56,779,537.32

APPENDIX B

Department of Energy
Washington, DC 20585

October 23, 1987

MEMORANDUM FOR GEORGE B. BREZNAY
DIRECTOR
OFFICE OF HEARINGS AND APPEALS

FROM: MARSHALL A. STAUNTON MAS
ADMINISTRATOR
ECONOMIC REGULATORY ADMINISTRATION

SUBJECT: ERA INPUT FOR THE PODRA SECTION 3003 (c) REPORT

RECEIVED
1987 OCT 27 AM 10 16
OFFICE OF HEARINGS & APPEALS
DEPT OF ENERGY

We have completed our review of the funds held in escrow as of September 30, 1987, which have not been petitioned under Subpart V. This review was to identify the escrow amount in excess of that necessary to make restitution to persons or classes of persons in accordance with Section 3003 (b)(1) of the Petroleum Overcharge Distribution and Restitution Act of 1986. Once final payments are made into an escrow account, a Subpart V petition is filed with your office. Consequently, the escrow accounts that we examined still have balances due. Many of these accounts are for firms in bankruptcy or have been referred to the Department of Justice for collection. Since the extent of possible claims and amounts that will be available to satisfy the claims are not known at this time, it would be inadvisable to consider any of these funds excess.

Celebrating the U.S. Constitution Bicentennial — 1787-1987

QUESTION FROM SENATOR JAMES A. McCLURE

Question 8c: Has the Department provided for the disbursement of such excess amounts to the Treasury and others? If so, would you provide for the record a table indicating the recipients and the amounts received?

Answer: The money collected from oil overcharges is placed in a special escrow account in the Treasury. Monies determined to be in excess of that required for direct restitution are transferred to another account in the Treasury for Energy Conservation. States and territories are then allowed to submit proposals for funding energy conservation programs and funds for these programs are drawn from this account. For FY 1987, $134,066,670.82 was determined to be excess and was transferred to the Energy Conservation account in the Treasury. A table indicating the breakdown by state or territory of the use of the FY 1987 excess funds is attached. The excess amount for FY 1988, $56,779,537.32, has been transferred to the Energy Conservation account, but no breakdown is now available.

STATE OR TERRITORY	AMOUNT
NORTH CAROLINA	2,346,236
NORTH DAKOTA	1,484,245
OHIO	7,014,599
OKLAHOMA	1,527,895
OREGON	1,761,424
PENNSYLVANIA	7,939,798
PUERTO RICO	472,970
RHODE ISLAND	931,252
SOUTH CAROLINA	1,114,017
SOUTH DAKOTA	1,333,568
TENNESSEE	2,393,005
TEXAS	3,133,845
TRUST TERRITORIES	79,600
UTAH	1,295,100
VERMONT	960,075
VIRGIN ISLANDS	166,416
VIRGINIA	2,464,176
WASHINGTON	2,630,147
WEST VIRGINIA	1,728,651
WISCONSIN	4,696,809
WYOMING	753,729
TOTAL	$134,065,844

FY 1987 DISTRIBUTION BY STATE OR TERRITORY OF EXCESS FUNDS UNDER THE PETROLEUM OVERCHARGE DISTRIBUTION AND RESTITUTION ACT OF 1986

STATE OR TERRITORY	AMOUNT
ALABAMA	$ 1,463,837
ALASKA	1,166,635
AMERICAN SAMOA	157,052
ARIZONA	866,331
ARKANSAS	1,290,217
CALIFORNIA	4,664,527
COLORADO	2,730,093
CONNECTICUT	1,952,446
DELAWARE	581,042
DISTRICT OF COLUMBIA	639,805
FLORIDA	1,430,993
GEORGIA	1,717,846
GUAM	165,380
HAWAII	398,013
IDAHO	1,252,552
ILLINOIS	7,571,658
INDIANA	3,696,563
IOWA	2,920,865
KANSAS	1,595,095
KENTUCKY	2,475,288
LOUISIANA	1,133,773
MAINE	1,936,732
MARYLAND	1,957,516
MASSACHUSETTS	4,099,289
MICHIGAN	7,895,363
MINNESOTA	5,658,542
MISSISSIPPI	1,018,783
MISSOURI	3,334,292
MONTANA	1,406,103
NEBRASKA	1,618,851
NEVADA	594,639
NEW HAMPSHIRE	1,149,243
NEW JERSEY	3,824,097
NEW MEXICO	1,115,015
NEW YORK	12,204,329
NO. MARIANA ISLANDS	155,482

Department of Energy
Washington, DC 20585

April 12, 1988

Honorable Pete V. Domenici
United States Senate
Washington, D.C. 20510

Dear Senator Domenici:

On March 1, 1988, Secretary John S. Herrington, appeared before the Committee on Energy and Natural Resources to discuss the Department's Fiscal Year 1989 proposed budget authorization request.

Following that hearing, you submitted questions through Chairman Johnston, for our response to supplement the record. Enclosed are the answers to those questions, which also have been sent to the committee staff.

If you have any questions, please have your staff call Becky Thompson on 586-4277. She will be happy to assist.

Sincerely,

Robert G. Rabben
Assistant General Counsel
for Legislation

Enclosures

Celebrating the U.S. Constitution Bicentennial — 1787-1987

QUESTIONS FROM SENATOR DOMENICI

MINORITY HONORS TRAINING PROGRAM

Question 1. How many students has it served?

Answer 1. Data on the program through December 1987, show some 1,841 students have participated since the first awards were made in 1982.

Questions from Senator Domenici

Question 2. How successful have graduates been at finding employment?

Answer 2. Overall, the job placement of graduates has been extremely good. Total graduates from the program number 813. Of these 341 or 42 percent have been employed in energy-related jobs. Another 347 have found employment in non-energy related jobs or in military service, or have continued their education. Only 125 graduates (15.4 percent) are unaccounted for or are listed as being unemployed.

Questions from Senator Domenici

Question 3. How many colleges are participating in this program?

Answer 3. There are currently eight (8) colleges participating in the Minority Honors Training and Industrial Assistance Program.

Questions From Senator Domenici

Question 4. Please identify these colleges?

Answer 4. The following institutions are currently supported by the Program:

- Bronx Community College, Bronx, New York
- Coahoma Junior College, Clarksdale, Mississippi
- Greenville Technical College, Greenville, South Carolina
- Hawaii Community College, Hilo, Hawaii
- Houston Community College, Houston, Texas
- Laney College, Oakland, California
- Luna Vocational Technical Institute, Las Vegas, New Mexico
- Oklahoma State Tech., Okmulgee, Oklahoma

Questions From Senator Domenici

Question 5. To what extent are you using the labs and the labs' resources to advance this program?

Answer 5. During fiscal year 1987 the Program was modified to place additional emphasis on the development of linkages with local industries. The Department of Energy operating contractors, including the national laboratories, are included in the industrial linkages effort. We expect an expanded role for the national laboratories will emerge from discussions at an Industrial Linkages Conference of the eight schools and the Department of Energy that will be held on May 4-6, 1988.

Department of Energy
Washington, DC 20585

April 12, 1988

Honorable Lowell P. Weicker
United States Senate
Washington, D.C. 20510

Dear Senator Weicker:

On March 1, 1988, Secretary John S. Herrington, appeared before the Committee on Energy and Natural Resources to discuss the Department's Fiscal Year 1989 proposed budget authorization request.

Following that hearing, you submitted questions through Chairman Johnston, for our response to supplement the record. Enclosed are the answers to those questions, which also have been sent to the committee staff.

If you have any questions, please have your staff call Becky Thompson on 586-4277. She will be happy to assist.

Sincerely,

Robert G. Rabben
Assistant General Counsel
for Legislation

Enclosures

Celebrating the U.S. Constitution Bicentennial — 1787-1987

QUESTIONS FROM SENATOR WEICKER, JR.

FUEL CELLS

Question 1: Secretary Herrington, your FY89 budget request has recommended significant cuts in the research and development of fuel cells. Would you please provide the following:

- the rationale and expected impacts that the funding reductions would have in the development of the phosphoric acid fuel cell,
- the rationale and expected impacts that the funding reductions would have in the development of the molten carbonate fuel cell,
- the impact such reductions would have upon our nation's ability to produce a fully commercial fuel cell to compete against foreign designs.

Answer: No FY 1989 funds are requested for phosphoric acid fuel cells (PAFC). PAFC R&D, however, will continue in FY 1989 with currently available funds. The 11 MW "Configuration B" PAFC technology being developed by IFC will be continued with prior year funds. The 200 kW on-site PAFC subsystem tests will be completed in FY 1988. A basic technology effort will be completed in FY 1989. The planned 25 kW system tests at Engelhard will be completed in FY 1988, at which time Engelhard has stated that it will discontinue its development work on stationary PAFC systems. Westinghouse has acquired a large number of test hours on its 32 kW module (the basic repeating element in their 7.5 MW system). By the end of FY 1988 it will have test data on a larger 100 kW module (three 32 kW elements in series) and design information for a 375 kW module. The Westinghouse effort coupled with the earlier IFC experience in developing 40 kW and 4.8 MW systems should be sufficient for the private sector to complete PAFC development on its own and to commercialize the technology. IFC signed contracts with utilities for 20 of the 200 kW systems and is in the final stages of negotiations with others. It is estimated that orders for over 60 200 kW plants will be in place by late summer of 1988. The FY 1989 Molten Carbonate Fuel Cell (MCFC) request, together with prior year funds, is sufficient to continue the ongoing program in FY 1989 with all three major contractors. It is planned in 1989 to initiate action to competitively select the most promising cost-shared, coal fueled system for continued development.

With the technology lead that this nation has in fuel cells and the R&D being continued by the government and the private sector, the private sector is in a position to complete PAFC development and commercialize the technology. It should also be able to maintain the U.S. lead in molten carbonate and solid oxide fuel cell technology.

Questions from Senator Weicker, Jr.

Question 2: Are these particular budget cuts related to the Administration's efforts to build the Superconducting Super Collider?

Answer: No they are not. When the President approved the SSC it was done on the condition that it not take funds away from other projects. The Administration's commitment was reaffirmed by OMB Associate Director Robert Dawson in an October 14, 1987, letter to Chairman Roe of the House Science, Space and Technology Committee, which stated: "The funding for the SSC Project is proposed as an overall increase to the budget for general science, space, and technology programs (Function 250). It is the Administration's intent that funds for the SSC not be at the expense of support for other Federal basic research programs, including those of the Department of Energy, the National Science Foundation and the National Aeronautics and Space Administration." The President's FY 1989 Budget Request reinforces this Administration position.

QUESTIONS FROM SENATOR WEICKER, JR.

FUEL CELLS

Question 3: Which fuel cell designs are closest to commercialization?

Answer: The IFC 200 kW phosphoric acid on-site fuel cell system is closest to commercialization with IFC receiving contracts and/or commitments for over 60 of the 200 kW on-site systems (primarily to gas utility companies).

QUESTIONS FROM SENATOR WEICKER, JR.

FUEL CELLS

Question 4:	What is the present status in Japan's efforts to build a fully commercial fuel cell? How much money is provided by the Japanese government in supporting their fuel cell research and development programs?

Answer: Japan is at least several years behind the U.S. in the development of phosphoric acid fuel cell (PAFC) power plants. They are perhaps three to five years behind us in the development of molten carbonate (MCFC) and further behind on solid oxide (SOFC) systems. However, Japan is pursuing a very aggressive fuel cell program. The Japanese Government has reportedly committed a total of 57 billion yen ($407 million) to their overall fuel cell effort over a fifteen year time period (1980 - 1995). PAFC and MCFC are being emphasized in the Japanese program, with MCFC allocated about $200 million over the 1985-1995 time period. The funding for FY 1988 is reported to be approximately in the $10 to $20 million range for PAFC, $20 million for MCFC, and an unknown but probably much smaller amount for SOFC.

In the early 1980s, Japan purchased from the U.S. (IFC) a 4.8 MW PAFC power plant and gained considerable operating experience (which was also shared with the U.S.). They are now reportedly testing two 1 MW electric utility PAFC power plants of their own design. They are also developing on-site PAFC systems, with testing scheduled to be completed by 1991. In addition, they have reportedly recently purchased 20 PAFC stacks not total systems from IFC that should provide them with additional operating experience. On this basis, if their R&D is successful in meeting PAFC performance and cost targets, Japan could be in a position to make commercial PAFC offerings in the mid-1990s. Molten carbonate stacks of 10 kW have been tested and systems of 1 MW are scheduled for test in 1995. Solid oxide R&D is at an earlier stage with testing of units up to 500 watts having been accomplished. The schedule for scale up of solid oxide in Japan is not yet known.

Prepared by: George Rudins
Date: March 9, 1988
Coordination with:
Reviewed by:

Department of Energy
Washington, DC 20585

April 12, 1988

Honorable Chic Hecht
United States Senate
Washington, D.C. 20510

Dear Senator Hecht:

On March 1, 1988, Secretary John S. Herrington, appeared before the Committee on Energy and Natural Resources to discuss the Department's Fiscal Year 1989 proposed budget authorization request.

Following that hearing, you submitted questions through Chairman Johnston, for our response to supplement the record. Enclosed are the answers to those questions, which also have been sent to the committee staff.

If you have any questions, please have your staff call Becky Thompson on 586-4277. She will be happy to assist.

Sincerely,

Robert G. Rabben
Assistant General Counsel
for Legislation

Enclosures

Celebrating the U.S. Constitution Bicentennial — 1787-1987

Questions from Senator Hecht

Question 1: I understand that Nevada's proposal for the SSC was deficient in a number of ways, that it did not meet some of the siting criteria that were necessary. Could you tell me what the deficiencies were, what siting criteria were not met? How did the Nevada proposal for the SSC rank overall, compared to the other proposals?

Answer: There are six technical evaluation criteria (and cost considerations) being considered in the review of SSC site proposals. These include geology and tunneling, regional resources, environment, setting, regional conditions, and utilities.

Based upon DOE's review and consultations with the National Academy of Sciences/National Academy of Engineering (NAS/NAE), Nevada's proposal is most deficient in the regional resources criterion. The following regional resources factors are considered not as strong in the Nevada proposal as those desired for an SSC site:

- Proximity to existing communities offering diversified housing, services, and cultural opportunities.
- Proximity to major research universities.
- Availability of professional employment opportunities for family members of SSC staff.
- Accessibility via air for visiting researchers.
- Availability of a diverse, commercial technological support infrastructure.
- Availability and adequacy of a local or regional labor pool of skilled workers experienced in high technology projects.

A complete debriefing by a DOE team of Nevada's SSC proposal took place with representatives of the State of Nevada on March 11, 1988.

It is not possible to tell you the ranking of Nevada's SSC proposal compared to other proposals because a ranking of proposals was not done by the NAS/NAE or the DOE. Proposals were judged on their merits to be included (or not included) on the best qualified list without ranking.

Questions from Senator Hecht

Question 2: Have you appointed a Director of the Office of Subseabed Disposal Research, as the new law told you to, and when will you make funds available to get this work underway, as Senator McClure, Senator Domenici, and Senator Evans and I have suggested?

Answer: The Department has taken the initial administrative steps to comply with the provisions of P.L. 100-203, including section 224(b) which establishes a separate organizational entity within the Office of Energy Research (ER), reporting to the Director of Energy Research. We are in the process of establishing an SES position within the newly designated organization. In the interim, until these activities are completed, we have identified a member of the ER staff as a Departmental point of contact for all Subseabed activities. Although no funds were appropriated specifically for this purpose, we are determining how to proceed and hope to develop a course of action soon.

QUESTIONS FROM SENATOR HECHT

HIGH-LEVEL WASTE TRANSMUTATION

Question 3:	I understand the Westinghouse has done some preliminary research that suggests that most high level nuclear waste could be destroyed by transmutation in slightly modified conventional pressurized water reactors. Are you aware of this, and does the Department intend to fund research in this area?
Answer:	We are aware of a recent Westinghouse study involving the transmutation of spent light water reactor fuel in fast and thermal reactors. The destruction of nuclear waste by transmutation in nuclear reactors has been considered by Westinghouse and many other organizations over the past 25 years. Some of these studies were supported by DOE and its predecessor organizations. In principle, transmutations could prove helpful in reducing radioactivity; however, it is an unproven complex technology that would require special processing of spent reactor fuel in facilities not now in place. We have no plans to fund new transmutation studies at this time. We are, however, doing work on the destruction of transuranic wastes as addressed in the answer to question 4.

QUESTIONS FROM SENATOR HECHT

TRANSURANIC WASTE DESTRUCTION

Question 4: The Japanese are beginning research that they hope will lead to a way to destroy transuranic waste in light water reactors. Are you aware of this research, and are we doing any similar work in this country?

Answer: We are aware of Japanese and European research in the destruction of transuranic wastes using both light water reactors (LWRs) and liquid metal reactors (LMRs).

In general, LMRs are more effective than LWRs in burning transuranic waste due to the greater fissionability of transuranic elements in the fast neutron spectra of LMRs. We are supporting studies of transuranic burnup and transuranic recycle in advanced LMRs through the Integral Fast Reactor (IFR) program conducted by the Argonne National Laboratory. Study results to date appear promising; however, there are substantial technical issues regarding the effectiveness and economics of these processes that must be resolved.

QUESTIONS FROM SENATOR HECHT

REPROCESSING SPENT NUCLEAR FUEL

Question 5: Do you agree with me that it would be a mistake for the United States to let other countries get far ahead of us in terms of developing and applying technology to more efficiently and more safely reprocess spent nuclear fuel, and destroy the left over waste? What is the U.S. doing to keep from falling behind other countries in this area?

Answer: The United States is not faced with the same energy choices as other countries. President Reagan lifted any government restrictions on commercial reprocessing in 1981. Further, the Nuclear Waste Policy Act directs the Department to develop geologic repositories for the disposal of nuclear fuel or high-level radicactive waste that results from the reprocessing of spent fuel.

Reprocessing is conducted in this country as part of our Defense Programs activities. The work conducted by DOE through its West Valley Demonstration Project also contributes to our knowledge in this area. Finally, we think it is important to keep abreast of reprocessing developments in other countries through our continued participation in various technical meeting, exchanges, and other arrangements with foreign governments that provide us with access to this technology.

Department of Energy
Washington, DC 20585

April 22, 1988

Honorable J. Bennett Johnston
Chairman
Committee on Energy and Natural
  Resources
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

On March, 1, 1988, Secretary John S. Herrington appeared before your subcommittee to discuss the Department's Fiscal Year 1989 budget authorization request.

Following that hearing, you submitted written questions for our response to supplement the record. Enclosed are the answers to those questions, except for question 4(d), which, as discussed with your staff, will follow as soon as the answer is available. If you have any questions, please have your staff call Becky Thompson on 586-6718. She will be happy to assist.

Sincerely,

Robert G. Rabben
Assistant General Counsel
  for Legislation

Enclosures

ADDITIONAL
POST-HEARING QUESTIONS AND ANSWERS
RELATING TO THE
MARCH 1. 1988 HEARING
BEFORE THE
SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES

WITNESS: JOHN S. HERRINGTON
SECRETARY OF ENERGY

QUESTIONS FROM SENATOR JOHNSTON

NUCLEAR ENERGY R&D

Question 1(a): I continue to be concerned about the lack of emphasis within DOE's budget on advanced reactor research for civilian applications. Shouldn't we be focusing more resources on advanced civilian reactor development?

Answer: The Department believes sufficient emphasis is being provided for the advanced reactor R&D program.

For the advanced LMR, the demonstration of the potential safety and economic breakthroughs from the Integrated Fast Reactor metal fuel cycle concept are receiving funding priority. The modular HTGR concept has no outstanding technical feasibility issues and does not require a similar level of funding.

QUESTIONS FROM SENATOR JOHNSTON

NUCLEAR ENERGY R&D

Question 1(b): Shouldn't DOE be taking the lead in planning for the next generation reactors?

Answer: DOE has assumed a lead role in supporting the advancement of two next generation advanced reactor concepts to meet the Nation's energy needs--the advanced Liquid Metal Reactor (LMR). and the Modular High Temperature Gas-Cooled Reactor (MHTGR). For each concept. DOE is supporting tasks needed to be completed to permit the consideration of the concept by the marketplace.

QUESTIONS FROM SENATOR JOHNSTON

NUCLEAR ENERGY R&D

Question 1(c):	What is the proper role of DOE?
Answer:	In the advanced reactor program, DOE's role is to support long-term, high-risk R&D efforts which provide the marketplace with reliable advanced nuclear power system options that provide significant breakthroughs in safety and economics.

QUESTIONS FROM SENATOR JOHNSTON

NUCLEAR REACTOR R&D

Question 1(d):	Should Congress specifically authorize a new reactor development program?
Answer:	The Department believes that updating the 30-year-old NRC licensing process, reauthorization of the expired Price-Anderson nuclear insurance and contractor indemnity system, and the introduction of Advanced Light Water Reactors to meet near-term electricity supply needs are key for the revitalization of the nuclear power option in this country--not the near-term development of a new reactor that utilities have expressed little interest in demonstrating for subsequent deployment. Authorizing funding greater than proposed in the FY 1989 budget request for advanced reactor R&D would not be in accord with the President's program. DOE already has in place an advanced reactor development program that features continued research and technology development of both liquid metal- and gas-cooled reactor designs. These "next generation" reactor systems are funded to provide utilities with options to meet expected energy supply requirements after the turn of the century.

QUESTIONS FROM SENATOR JOHNSTON

NUCLEAR REACTOR R&D

Question 2(a): DOE's budget request appears to focus limited advanced reactor resources on the liquid metal reactor concept rather than the high-temperature gas cooled reactor. Why is that?

Answer: DOE's philosophy regarding the development of the advanced LMR and HTGR has been to carry designs to the point where they are sufficiently developed to be attractive to industry. When an industry consortium is prepared to take the lead in moving forward with a project. DOE will decide what the proper government role should be to assist the private sector in advancing the technology. We believe the HTGR has progressed to that point in its design evolution and have therefore proposed a level of funding support which--when combined with industry cost-sharing--will maintain the HTGR design for future industry-sponsored demonstration and possible deployment.

The LMR is in a different phase of development where additional trade-off studies and technology breakthroughs are needed to advance a concept to the point of attracting an industry sponsorship. The funding provided for the LMR is aimed at developing an advanced reference concept design and metal fuel cycle and design by focusing R&D on the Integral Fast Reactor concept.

QUESTIONS FROM SENATOR JOHNSTON

NUCLEAR REACTOR R&D

Question 2(b):	Aren't both reactor concepts equally viable?
Answer:	Yes. Conceptual designs developed by DOE for two advanced LMRs and the HTGR are all potential candidates for utility/industry-sponsored demonstration and eventual commercial deployment. The needs of the marketplace will ultimately determine which, if any, advanced reactor concepts are selected.

QUESTIONS FROM SENATOR JOHNSTON

NUCLEAR REACTOR R&D

Question 2(c): Should we really be ruling out the HTGR at this point?

Answer: No, we are not ruling out the HTGR at this point. There is no utility interest, however, in participating in a demonstration of the HTGR design. Further, it makes little sense to spend significant R&D funds on the HTGR until after the current Nuclear Regulatory Commission licensing review is completed.

QUESTIONS FROM SENATOR JOHNSTON

NUCLEAR REACTOR R&D

Question 3: What percentage of DOE's nuclear energy R&D budget goes primarily toward defense applications and what percentage to SDI?

Answer: Approximately 29 percent of the President's FY 1989 budget request for Nuclear Energy R&D programs support the development of nuclear power sources that have both defense applications, including the President's Strategic Defense Initiative, as well as potential civilian missions. Funds are allocated by project and are not accounted for according to whether the potential application is primarily defense- or civilian-related.

QUESTIONS FROM SENATOR JOHNSTON

NUCLEAR ENERGY R&D

Question 4:	Why is the Administration requesting more money for advanced reactors in space ($145 million) than on the ground ($61 million)? Please justify these budget priorities.
Answer:	The budget request for the two space reactor projects. SP-100 and the Multimegawatt Space Reactor. totals only $81 million. Other activities within the $145 million which are not space reactor projects include the continued development of radioisotope power supplies ($27.7 million) and irradiation test charges ($15.0 million). The FY 1989 budget request for ground-based reactor systems includes $61.2 million for such advanced reactors as the HTGR and the liquid metal reactor as well as $26.8 million for light water reactors (for a total of $88 million).

Regardless of the funding allocations for space- and ground-based reactor systems. each program has been formulated based on its objectives and the funds it requires to conduct its mission. Ground-based reactor activities are essentially research and development functions with the purposes of making technologies available for future industry-sponsored demonstration or improving their safety and reliability.

In the space reactor area. efforts are concentrated on designing reactor systems. on hardware procurement. and on

Answer 4
(continued): preparing for the fabrication and operation of a test reactor. Also, construction activities are necessary to modify an existing containment building within which nuclear reactor tests will be conducted. These activities are inherently more funding-intensive than civilian reactor R&D activities where significant investment in test facilities already exists. In each case, however, the budget request has been limited to only essential program elements. The relative amount of funding provided to these programs, considered alone, provides only part of an assessment of their relative priorities. The Department attaches high priority to both the space reactor and ground reactor programs.

Nuclear Reactor R & D

Question: Could we be making better use of the national laboratories and other DOE facilities? Are DOE's energy R&D programs structured in such a way to use the laboratories in the most efficient way? Should we be restructuring the national laboratory system to make better use of those resources?

Answer: The structure of the DOE laboratory system has evolved over time to provide effective program management and world-class R&D for the various R&D programs that the laboratories serve. With a few exceptions, DOE laboratories are operated by contractors which permits the government to provide the large, long-term capital investments necessary to create the laboratories and, at the same time, employ experienced management under contract with industry and universities. This government-owned, contractor operated arrangement has proven very flexible and successful in conducting high quality Federal R&D in an efficient manner.

For the nine DOE multiprogram national laboratories that conduct the majority of the Department's laboratory R&D, DOE implements an annual oversight and planning process to ensure that these laboratories pursue activities that are consistent with the near- and long-term objectives of the Department's various R&D programs. This institutional planning process, now in its tenth year, includes participation of all the Department's R&D programs and has been extremely effective in planning and implementing current and future R&D programs at the laboratories. Through this process, DOE programs ensure that the appropriate resources, capabilities, and facilities are made available at the laboratories for the successful cost-effective execution of their research programs. The process also ensures that appropriate corrections and adjustments are made to laboratory programs, including reallocation of resources and restructuring of objectives if it is warranted, to achieve maximum program efficiency. This continuing refinement of program activities through responsible R&D program management precludes the need to restructure the national laboratory system.

QUESTIONS FROM SENATOR JOHNSTON

NUCLEAR REACTOR R&D

Question 6(a): I recall that several years ago DOE was planning to conduct a facilities optimization study to evaluate the current use of our facilities and get at the issue of how we can better use those resources. What was the outcome of that study?

Answer: Conclusions from the study were:

o Major facilities--such as the Fast Flux Test Facility, the Experimental Breeder Reactor No. II, and the Energy Technology Engineering Center--have evolved such that while there is some overlap in capability, there is currently little overlap in functional utilization.

o To achieve further significant facility cost reductions would require consolidation and loss of unique facility test capabilities currently required in the civilian reactor and space and defense power systems development programs.

o Based on known program needs, reactor irradiation requirements could be conducted at one site at some future time; however, there are inherent risks and penalties that must be considered in consolidating program activities within a single reactor facility, such as an extended outage of the single facility.

Answer 6(a)
(continued):

- Implementation of any potential facility closeout decision requires advance planning and 2 to 4 years for shutting a major facility to minimize program disruptions and overall Government costs.
- Cost reduction assessments and initiatives are underway at all of the sites. Efforts should be continued to develop and to achieve, as appropriate, further improvements that are cost beneficial.

QUESTIONS FROM SENATOR JOHNSTON

NUCLEAR REACTOR R&D

Question 6(b): What action was taken as a result?

Answer: The actions taken as a result of the study include:

- A metal fuel/oxide task force was established: their recommendations resulted in a decision to convert the FFTF to metal fuel, thereby utilizing one fuel supply capability for both the EBR-II and the FFTF: the layup of the Secure Automated Fabrication (SAF) line (which was not required based on the conversion of FFTF to metal fuel); and, the phased shutdown of the 308 Building with the FFTF metal fuel assembly activities to be consolidated in the existing and modern Fuel Assembly Annex of the Fuels and Materials Examination Facility.

- The shutdown of the Critical Mass Laboratory consistent with completion of program requirements and a Department-wide evaluation indicating no further need.

- The initiation of a study (to be complete in March 1988) between DOE and three local utilities in the Hanford, Washington, area to assess the feasibility of a

Answer 6(b)
(continued): privately-financed electrical generating addition to the FFTF. Such an addition would provide revenues to DOE from the sale of steam, as well as Liquid Metal Reactor (LMR) steam generator operations and performance data.

- Continuation of closeout activities for the Wing-9 Hot Cell at the Los Alamos National Laboratory furthering the consolidation of irradiation examinations at other existing hot cells.

- Increased use of the NE facilities on a full cost recovery basis.

- Preparation of a Facility Utilization plan that projects the specific uses of all major NE test facilities through FY 1996. This plan is presently in draft form and is being updated to reflect current LMR program planning.

- Preparation for initiation of a program with universities and industry to capitalize on the unique resources offered by the EBR-II complex to attract, train, and utilize young, promising talent in all aspects of the reactor systems, fuel manufacturing, fuel processing, and waste treatment.

Answer 6(b) (continued): DOE continues to examine, on an ongoing basis, possible areas for further facility consolidation and economies. Currently, potential missions for the FFTF are being assessed to determine how best to utilize this capability to more effectively accomplish program objectives.

QUESTIONS FROM SENATOR JOHNSTON

THREE MILE ISLAND CLEANUP PROGRAM

Question 7(a): No funding is requested in FY 1989 for the TMI cleanup program. Will DOE's role in the program be completed by the end of FY 1988?

Answer: DOE will complete its program in FY 1989 as quickly as the reactor defueling schedule permits. using funds appropriated in FY 1988.

QUESTIONS FROM SENATOR JOHNSTON

THREE MILE ISLAND CLEANUP PROGRAM

Question 7(b): Will the shipments of damaged fuel from TMI to the Idaho National Engineering Laboratory be completed in FY 1988?

Answer: No. The GPU Nuclear Corporation (GPU Nuclear) plans to complete defueling of the reactor by the end of 1988 and to complete shipment of the core debris in 1989. GPU Nuclear also expects to complete the recovery program and place the plant in a safe monitored condition during 1989.

QUESTIONS FROM CHAIRMAN JOHNSTON

Nuclear Waste

Question 1: What is the status of efforts to phase out work at the waste repository sites in Texas and Washington?

Answer: Program direction for orderly phase out of activities was provided to all Basalt Waste Isolation Project (Washington) and Salt Repository Project Office (SRPO) contractors, and to the affected States (Texas, Utah, Louisiana, Mississippi), by the middle of January 1988. Plans for phase out, reclamation, and contract terminations have been prepared.

Specifically:

- Discussions with participants were instituted December 23, 1987.
- Information offices in Monticello, Utah; Minden, LA; and Tulia, Texas, were closed December 31, 1987.
- Technical guidance restricting activities was sent to contractors at SRPO on January 11, 1988. Termination letters to major SRPO contractor staff were sent February 19, 1988.

Answer 1 (cont'd)

- The Salt Project Office Interagency Agreements were completed in March 1988, except for Corps of Engineers and Bureau of Land Management support on reclamation activities.

- Closeout activities, using funds previously authorized, were approved for Louisiana, Mississippi, and Utah in February 1988, for completion no later than March 21, 1988, and for Texas and Washington for completion by August 31, 1988.

- Revised grants for the Umatilla, Yakima, and the Nez Perce Indian Tribes have been approved. The Indian Tribes will be funded until December 22, 1988.

- Information Offices in Vega, Texas; Moab, Utah; and Richton, Mississippi, were closed by March 31, 1988, and the Hereford, Texas, office will be closed by September 30, 1988.

All site-specific activities, such as the design of the exploratory shaft facilities for the Basalt and Salt sites, the conduct of the hydrologic tests at the Basalt site, and the

Answer 1 (cont'd)

operation of the microseismic monitoring system in Texas, were terminated by March 21, 1988.

Other activities, such as the abridged reviews and final preparation of the project documents will be completed before the end of FY 88. The latter activities are intended to preserve the projects' data in a useful manner, and to provide for technology transfer.

Reclamation activities, including the plugging of over 200 boreholes and the restoration of the surface at the Salt and Basalt sites are expected to continue through the first quarter of FY 90.

When appropriate, responsibility for specific boreholes will be transferred to other programs for environmental monitoring or other productive uses.

- Reclamation activities will be completed in Utah by April 1988 and in Texas by July 1988.

Answer 1 (cont'd)

- Reclamation activities in Louisiana and Mississippi will be completed by March 1989, and at the Hanford site in Washington by November 1989.

Sites will be returned to their original condition as nearly as practical, and DOE will also comply with any applicable Federal, State and local regulations consistent with its responsibilities under the Act. Special tribal religious concerns relating to Gable Mountain, Washington, will be appropriately considered and coordinated with the interested Tribes.

Cataloging, indexing and storage of Government records, pertaining to program activities conducted under the Act, will be completed in FY 89.

Core samples from well drilling will be consolidated and stored. Nuclear Waste Fund property will be transferred to other program activities or surplused.

Answer 1 (cont'd)

Finally, contract closeout activities associated with the audits and termination of over 100 contracts and subcontracts is expected to continue through FY 89 and into FY 90.

In accordance with our letter of March 21, 1988, a more detailed report on phaseout will be provided to your office in mid-April.

QUESTIONS FROM CHAIRMAN JOHNSTON

Nuclear Waste

Question 2:	What will be the cost of terminating work at these two sites? Why are the costs so high?
Answer:	The preliminary estimates of all costs to be incurred in FY 88 and beyond are listed in the table below.

	$MILLIONS	
	BWIP	SRPO*
First quarter costs through December 31 (actual)	26	21
Second quarter costs through March 21 (estimate)	26	21
Reclamation Costs (estimates)	30	4
Termination Costs (estimated costs after March 21, other than reclamation)	29	28
	111	74

The bulk of the costs in first quarter FY 88 preceded the Amendments Act and are neither reclamation, phaseout or termination costs. The costs incurred during the 90-day period after the Amendments Act was passed are program costs incurred to implement an orderly phaseout of site-specific activities and other activities.

The level of funding during the first 90-day period following the Amendments Act passage is

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* SPRO includes sites in Texas, Utah, Louisiana and Mississippi.

Answer 2 (cont'd)

generally comparable to the first quarter FY 88 costs. Nonreclamation costs after March 21 are appropriately described as termination costs.

The termination costs of approximately $24 million at BWIP and $29 million at SRPO are preliminary estimates and represent only approximately 5% of the total costs, since passage of the Nuclear Waste Policy Act of 1982, expended prior to March 22. These termination costs are consistent with the normal cost of terminating technical services that had reached a combined level of approximately 1,500 full-time personnel. These costs include relocation costs, severance pay, contract settlements, and the costs for compiling, publishing, preserving, and storing the projects' records.

QUESTIONS FROM CHAIRMAN JOHNSTON

Nuclear Waste

Question 3: When will all contracts be phased out?

Answer: Except for residual records management, Government property disposal, and reclamation activities, work will be completed on all of the contracts at the Basalt Waste Isolation Project (BWIP) site and all Salt Repository Project Office (SRPO) sites by the end of FY 88. The records management activities are expected to be completed in late FY 89. Reclamation activities are expected to be completed in the first quarter of FY 90. Additional details on the status of each of the prime contractors at the BWIP and SRPO sites will be available and will be included in a contract status summary to be provided with a closeout report to Congress in mid-April 1988. The activities associated with the receipt and disposition of termination proposals from each of the contractors and the subsequent financial audits, will continue through FY 89, and into FY 90. Contractors under the Federal Acquisition Regulations have one (1) year (from February 1988) to develop and submit termination settlement proposals. The audit activities beyond the first quarter of FY 90 are expected to be minimal.

QUESTIONS FROM CHAIRMAN JOHNSTON

Nuclear Waste

Question 4:	When will all grants to states other than Nevada be phased out?
Answer:	The authority to spend for State participation grants (under section 116(c) of the Act, as amended) ceased as of March 22, 1988, for the following: Louisiana Mississippi Utah Washington Department of Ecology Washington Legislature The Texas grant is scheduled to close out on August 31, 1988. The grants to the Nez Perce, Umatilla, and Yakima Indian Tribes are scheduled to close out on December 22, 1988.

QUESTIONS FROM CHAIRMAN JOHNSTON

Nuclear Waste

Question 5: What are the Department's plans for reclamation work at the Washington and Texas sites? What will be the cost of this reclamation work? Is reclamation work required at any other of the original nine (9) sites considered for a repository?

Answer: DOE's plans for reclamation work are designed to restore the sites, as nearly as possible, to their original condition. In conducting reclamation work, the Department will comply with Federal, State, and local regulations, and, in the case of Gable Mountain in Washington, due to its religious historical significance, will act to preserve any archeological resources.

BWIP Reclamation:

Estimated Start: July 1988

Estimated Completion: November 1989

Estimated Cost: $30 Million

Activities

- Determine regulatory requirements.
- Plug 92 boreholes, ranging to 4,000 foot depth.
- Close Near Surface Test Facility, includes 3,000 feet of tunnels.
- Reclaim a hazardous waste pond.
- Clean up laboratory hot-cell.

Answer 5 (cont'd)

SRPO Reclamation:

Estimated Start: April 1988

Estimated Completion: March 1989

Estimated Cost: $4 Million

Activities

- Determine regulatory requirements.
- Plug 8 boreholes in Utah ranging to 6,384 foot depth.
- Plug 94 boreholes in Mississippi ranging to 5,043 foot depth.
- Plug 23 boreholes in Louisiana ranging to 6,041 foot depth.
- Verify closure and/or plug 109 small diameter shallow borings in Louisiana.
- Restore 5 tiltmeter sites in Louisiana.
- Restore 18 microseismic sites in Texas.
- Restore 5 weather stations in Texas.
- Restore 21 erosion monitoring sites in Texas.
- Clean up laboratory hot-cell (estimated cost not available and not included in total cost given earlier).

As indicated in the list above, reclamation activities at the alternate salt sites in Louisiana, Mississippi, and Utah are required.

QUESTIONS FROM CHAIRMAN JOHNSTON

Nevada Site

Question 1: **What is the status of work at the Yucca Mountain site? What work is going on now? When will the Department be ready to sink the exploratory shaft at Yucca Mountain?**

Answer: Currently DOE is in the process of interacting with the State of Nevada and the Nuclear Regulatory Commission on the Consultation Draft of the Site Characterization Plan which was published in January 1988. The Site Characterization Plan will be completed subsequent to the consultation process, along with the finalization of detailed Study Plans and quality assurance documents that are necessary prior to the initiation of new field and laboratory work. It is expected that the Site Characterization Plan will be published in early FY 1989.

Field and laboratory work that is currently underway includes ongoing monitoring activities (such as seismic monitoring and water table monitoring), data collection in the field, laboratory analyses that have appropriate quality assurance procedures, and prototype tests being completed to develop testing methods and testing procedures. The work that is ongoing was described in a letter to the State of Nevada dated March 13, 1987, a copy of which is attached.

Answer 1 (cont'd)

Based on the current schedule projections, the start of exploratory shaft construction will be in June 1989.

Department of Energy
Washington, DC 20585

MAR 13 1987

Mr. Robert R. Loux, Executive Director
Agency for Nuclear Projects
Nuclear Waste Project Office
Capitol Complex
Carson City, Nevada 89710

Dear Mr. Loux:

Enclosed is a copy of the report entitled Nevada Nuclear Waste Storage Investigations Project Summary of Ongoing and Planned Site Characterization Activities for the Candidate Site at Yucca Mountain, Nevada. This report was prepared by the Nevada Nuclear Waste Storage Investigation Project (NNWSI) in response to agreements reached between the Department of Energy (DOE) and the Nuclear Regulatory Commission (NRC) to provide letter reports describing ongoing site characterization studies at the two Federal sites. No new site characterization studies have been initiated at the NNWSI Project site since its identification as a candidate for characterization in May 1986. Stop work orders were issued to ensure that the appropriate quality assurance program has been implemented before site characterization data collection begins. When the stop work orders are released and if any new site characterization studies are initiated at the NNWSI Project site before the Site Characterization Plan (SCP) is issued, study plans will be provided for review by the State and NRC in advance.

It is DOE's intention that exploratory shaft study plans will be released along with the NNWSI Project SCP. To the extent possible, study plans for other activities scheduled for initiation during the first year after SCP issuance will be released with the SCP as well.

Drafts of NNWSI Project SCP Chapters 1-7 are being forwarded to your office for your information and assistance in becoming familiar with the document before its anticipated release in midsummer. DOE representatives would be pleased to meet with you at your request to discuss these chapters.

If you have additional questions regarding the subject report, NNWSI Project's study plans, or the draft copies of Chapters 1-7, or if you would like to arrange a meeting to discuss Chapters 1-7, please contact Dr. Donald Vieth, Project Manager, at (702) 295-3662.

Sincerely,

Tom Isaacs

Stephen H. Kale
for Associate Director for
Geologic Repositories
Office of Civilian Radioactive
Waste Management

Enclosure

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NEVADA NUCLEAR WASTE STORAGE INVESTIGATIONS PROJECT
SUMMARY OF ONGOING AND PLANNED SITE CHARACTERIZATION ACTIVITIES FOR THE CANDIDATE SITE AT YUCCA MOUNTAIN, NEVADA
May 1986 - April 1987

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MARCH 1, 1987

NNWSI PROJECT
SUMMARY OF ONGOING AND PLANNED SITE CHARACTERIZATION ACTIVITIES FOR THE CANDIDATE SITE AT YUCCA MOUNTAIN, NEVADA
May 1986 - April 1987

1.0 Preface

The Nuclear Waste Project Act (NWPA) of 1982 requires that the Department of Energy (DOE) prepare and issue a Site Characterization Plan (SCP) to the Nuclear Regulatory Commission (NRC) and to affected States and Indian Tribes before sinking exploratory shafts (ES) at any candidate sites. While site characterization activities related to the exploratory shaft facility (ESF) will not be initiated until after the issuance of the SCP, some surface - based activities are ongoing or may be initiated before issuance of the SCP.

During the May 7-8, 1986, NRC DOE meeting on the level of detail for site characterization plans and study plans, the DOE agreed to prepare a letter report describing these ongoing and planned site characterization activities for the States and Indian tribes. Ongoing activities are defined as site characterization activities, as defined by NWPA, that were in progress at the time of Presidential Approval (May, 1986). Planned activities are defined as site characterization activities, as defined by NWPA, that have been started, or are planned to be started, after Presidential approval, but before the expected date of SCP issuance (April, 1987).

2.0 Introduction

According to the NWPA of 1982, site characterization refers to those research activities, whether in the field or in the laboratory, that are undertaken to establish the geologic condition and the range of parameters relevant to an evaluation of the suitability of a candidate site. Yucca Mountain became a candidate site on May 28, 1986, with the President's approval of the recommendation by the Secretary of the DOE. This recommendation was accompanied by a final Environmental Assessment pursuant to the NWPA.

Site characterization activities that take place in the field include mapping, geophysical surveys, borings, surface excavations, excavation of exploratory shafts, subsurface lateral excavations and borings, and in situ testing. Laboratory activities include measurement of thermal, mechanical, and hydrological rock properties; analysis of gas and water samples and fossil plant material; detailed mineralogic and petrologic analyses; and geochemical studies under conditions simulating the repository environment. Office activities include modeling and data reduction and analysis. Excavation of an exploratory shaft and in situ testing at the depths of waste emplacement are required by the NRC (10 CFR 60.10(b)), and were described in the DOE Mission Plan.

2.1 The Nevada Nuclear Waste Storage Investigations (NNWSI) Project Site Characterization Plan (SCP).

Site information gathered during the 1978 to 1984 time frame was used to prepare the EA and to evaluate the site against the DOE siting guidelines. Site investigations completed before Presidential approval (May 1986) but not reported in the EA will be described in the SCP, tentatively scheduled for issuance in April 1987.

Data Chapters 1 through 5 of the NNWSI Project SCP will establish the current understanding about the Yucca Mountain site with regard to Geology (Chapter 1), Geoengineering (Chapter 2), Hydrology (Chapter 3), Geochemistry (Chapter 4), and Meteorology and Climate (Chapter 5). Current conceptual designs for the repository and waste package are provided in Chapters 6 and 7, respectively. Results from ongoing studies and design activities available too late for incorporation into the SCP will be reported in the semiannual Progress Reports.

Chapter 8 of the SCP contains a description of plans for site characterization activities. Section 8.1 of the SCP describes the rationale for the planned site characterization program, while Section 8.2 discusses the technical and regulatory issues that are to be resolved during site characterization. Section 8.3 is the Plans section of the SCP and is structured on the basis of Issues and Information Needs, using the NNWSI Project Issues Hierarchy. Section 8.4 describes the plans for site preparation for the surface and subsurface excavations at the exploratory shaft location and a description of the exploratory shaft and underground test facilities. Section 8.5 reviews the milestones and decision points in the site characterization program up to submittal of the license application. Section 8.6 provides a description of the Quality Assurance Program for the Project, and Section 8.7 describes the plans for decontamination and decommissioning of the candidate site if the site is not selected for development as a repository. Enclosure 1 provides a working copy of the structure of Chapter 8.

Details of planned in situ testing in the Exploratory Shaft will be described in the SCP and in Study Plans, which will provide supporting material of the Yucca Mountain SCP.

2.2 The NNWSI Project Issues Hierarchy.

The Issues Hierarchy is the means by which the NNWSI Project has abstracted and organized the repository siting and licensing requirements into a hierarchial structure of Key Issues, Issues, and Information Needs. This hierarchial structure provides a means to distinguish broad questions of overall suitability (Key Issues) from more specific questions (Issues). Some questions in the regulations governing repositories deal with performance objectives or regulatory standards; other questions deal with favorability or standard operating practices and procedures. In addition, some questions in the regulations deal with postclosure time frames, while others only deal with the preclosure period. Key Issues are related to broad technical or institutional requirements pertaining to the performance of the site with respect to compliance with applicable regulations. Issues are subordinate to Key Issues. Collectively, the group of Issues under a Key Issue indicates what questions must be resolved to satisfy the Key Issue. The Issues are also generally readily identifiable as elements of the regulations. Information Needs are subordinate to Issues and identify the specific information, data, and analyses needed to resolve the Issues.

Issues within each Key Issue in the NNWSI Project Issues Hierarchy are grouped into Characterization, Design, and Performance Issues. The separation of topics according to preclosure and postclosure time frames is automatic, because the Key Issues explicitly make the time frame distinction. Characterization Issues encompass the site characteristics, processes, and events that may affect repository design and performance. They include detailed information on the geologic, hydrologic, and other site characteristics. Design Issues address needs for information about the design of the geologic repository operations area and its associated surface facilities and underground facility. Performance Issues address the analyses necessary to assess the suitability of the Yucca Mountain site and its proposed repository facilities as a licensable repository system. Performance Issues encompass the requirements placed on the behavior of the repository system. Key Issue 3 is not included because it represents the environmental regulatory requirements and Information Needs, and covers monitoring and mitigation efforts. Key Issue 3 will be fully developed after the Environmental Impact Statement (EIS) scoping meetings and hearings are completed.

Information Needs were used as the basis for defining the field and laboratory investigations to be conducted during site characterization. Each Information Need described in Section 8.3 of the SCP will be presented according to a standard format:

1. A list of the data and parameters to be collected to satisfy the Information Need.
2. A discussion of the logic tying the data and parameters together.
3. A description of the studies and activities planned to collect the data and parameters for the Information Need.
4. A discussion of where the data and parameters will be used as input to other Information Needs.
5. A preliminary list of planned milestones and schedules for completion of the activities and studies.

2.3 Purpose

The purpose of this report is to summarize site characterization activities at the candidate site at Yucca Mountain, Nevada, for ongoing activities and the status of planned activities. This summary is provided in response to agreements between the DOE and the NRC resulting from the May 7-8, 1986 meeting. A more comprehensive discussion will follow in the SCP.

This summary concentrates on surface-based activities, which include all field activities defined by the NWPA as site characterization activities (e.g., drilling, drillhole testing and monitoring, trenching, mapping, and surveying at the Yucca Mountain site and surrounding region) that are not directly related to the ESF. Site Characterization activities related to the ES will not be initiated until after the SCP is issued. In addition, prototype testing which is not a part of site characterization, is not included in this summary. Geochemical and thermomechanical laboratory testing related to field activities are described, as well as meteorological studies. A brief technical rationale for each activity is provided, and activities are cross-referenced to the appropriate sections in the SCP.

This report is divided into two sections: ongoing site characterization activities and planned activities.

3.0 Ongoing Site Characterization Activities: Description and Rationale

Site investigation activities were initiated in 1978 when the NNWSI Project began to focus on tuff at Yucca Mountain as a potential repository host rock. The DOE identified Yucca Mountain as a potentially acceptable site in February 1983. Publication of the final EA for the Yucca Mountain site (May 1986) establishes that the site is suitable for site characterization. It is expected that some of the previously initiated activities will continue or be completed during the time between Presidential approval of the site recommendation, and issuance of the SCP. Examples of such activities include seismic monitoring, hydrologic monitoring, meteorologic monitoring, geodetic surveys, and laboratory analyses of degradable and irreplaceable samples. Office activities include modeling and data reduction and analysis of available data. Brief descriptions of each activity are given below.

3.1 Hydrologic Activities.

Various hydrologic activities have been initiated to establish the moisture conditions of the unsaturated zone, and to determine if recharge is episodic or steady-state. Saturated zone activities have been focused on determining the position of the water table, and on establishing the characteristics of fracture hydrology. The following specific activities, including the data reduction and analyses associated with field-data collection, are ongoing.

3.1.1 Seven holes have been drilled to monitor in situ moisture conditions in the unsaturated zone (Figures 1 and 2). These holes range from 400 to about 2,000 feet deep. One of these holes, USW UZ-1, has been fully instrumented and continuously monitors hydrologic properties of the unsaturated zone. Existing holes UZ-4, 5, 6, 6s, 7, and 13 will be instrumented and monitored. Gas samples are also obtained periodically from UZ-1. UZ-8, which was only partially drilled, will be re-entered, drilled to the planned total depth and instrumented. Re-entering any of these holes may be necessary to acquire additional information using geophysical logging tools and other instrumentation. This activity supports the studies identified in section 8.3.1.2.2 of the SCP.

3.1.2 Fourteen boreholes (Figures 1 and 2) were drilled into the saturated zone for the purpose of determining the elevation of the water table at various locations at the site. These boreholes range from about 1,600 to 2,000 feet deep. Water levels in the boreholes are monitored regularly to record fluctuations in water levels as a function of time. Water table levels from the fourteen water table holes were used to establish the hydraulic gradients used to estimate the saturated zone travel times presented in the EA. This activity supports the studies identified in sections 8.3.1.2.1 and 8.3.1.2.3 of the SCP.

3.1.3 Seventy-four neutron holes (depths from 50 to 200 feet) have been drilled in the vicinity of the site to monitor the infiltration of precipitation in various geologic settings. Because of the importance of flux estimates in the unsaturated zone, monitoring data on shallow infiltration is used to determine the upper bounds on flux through the repository horizon. The holes are logged periodically with thermal and epithermal neutron tools, and gamma-gamma tools. The locations of the neutron holes are shown in figures 1 and 2. This activity supports studies identified in section 8.3.1.2.3 of the SCP.

3.1.4 Nine streamflow gages have been installed in dry washes at and near Yucca Mountain to monitor the surface-water runoff that occurs during and after storms. Streamflow gages provide data to be used in predicting the frequency and magnitude of runoff resulting from heavy precipitation events, which are typical in desert environments. This activity supports studies in sections 8.3.1.5.1, 8.3.1.6.1, and 8.3.1.16.1 of the SCP.

3.1.5 Observations of debris-flow movements are being made at the time of occurrence in order to understand the mechanisms of flow and the climatic and other factors that cause them. This effort contributes to the understanding of the conditions under which paleoflood deposits occurred. This activity supports studies identified in sections 8.3.1.5.1 and 8.3.1.6.1 of the SCP.

3.1.6 Channel scour chains have been installed at three locations in the Yucca Mountain area to measure the amount of erosion, or scour, that occurs in washes during times of heavy runoff. Heavy runoff events expose successively deeper parts of the chain, thus giving a measure of the amount of sediment movement in the wash. This activity supports studies identified in sections 8.3.1.5.1 and 8.3.1.6.1 of the SCP.

3.1.7 Water-level and pressure measurements are being recorded continuously in the three UE-25c boreholes (Figure 2), located in Drill Hole Wash, using a continuously recording data logger to evaluate barometric, tidal, and other time-related effects on water levels. This information is used to provide better understanding of fracture porosity and other aquifer properties. Long-term, continuous recording is required in order to obtain an accurate correlation of the atmospheric pressure versus water-level data. This activity supports studies identified in section 8.3.1.2.3 of the SCP.

3.1.8 A mining company is drilling boreholes in the Amargosa Desert as part of its exploration programs. This commercial company have agreed to allow installation of tubing or piezometers in their holes for NNWSI Project data collection purposes. Some tubing and piezometers have been installed to measure water levels in areas adjacent to the Yucca Mountain site in order to provide data for regional hydrologic studies. Additional instruments will be installed if additional holes are made available to the Project. This activity supports studies identified in section 8.3.1.2.1 of the SCP.

3.1.9 Measurements of temperature, precipitation, and infiltration are being made at two recharge sites at Pahute Mesa and near Tonopah that are thought to be analogous to the Yucca Mountain site under pluvial climatic conditions. Temperature of the air and soil are continuously recorded on a data logger. Precipitation samples are collected from samplers and sent to the laboratory for stable isotope analysis. The measurements will aid the estimation of ground water recharge rates at the site under future pluvial conditions. This activity supports studies identified in section 8.3.1.5.1 and 8.3.1.5.2 of the SCP.

3.1.10 Laboratory testing of crushed tuff for hydrologic and other properties is being conducted for evaluation of sealing materials. Although this effort is necessary for work on sealing concepts, it has only an indirect tie to site characterization.

3.1.11 Laboratory measurements of hydrologic properties of existing core and cuttings and water and gas samples are being made to define in situ conditions. Relationships among various hydrologic properties in the unsaturated zone are being identified. This activity supports studies identified in section 8.3.1.2.2 of the SCP.

3.2. Geologic Activities.

The tectonic setting of the Yucca Mountain site is important to its overall suitability as a candidate site. Seismic data and geodetic measurements are both valuable in assessing tectonic setting of the site. The following geologic activities, including the data reduction and analyses associated with field-data collection, are currently ongoing.

3.2.1 Fifty-three seismometers (Figure 3) have been installed in the region around Yucca Mountain as part of a regional seismic network, extending in lines trending east-west from the west side of Death Valley to Caliente, and generally north-south from Tonopah to Lake Mead. The two lines intersect near Yucca Mountain. The seismometers are in continuous operation and data are recorded automatically. Data from the seismic network have been used to establish the earthquake catalog for the region (Rogers et al., 1976, 1983), which is essential for predicting the size and frequency of earthquakes that are possible during the pre-

and postclosure time periods. The ability to accurately locate earthquakes is also very important for establishing the activity of faults near the site. This activity supports studies identified in sections 8.3.1.8.2 and 8.3.1.17.3.

3.2.2 Ground motions are being measured to define aspects of the design basis for the proposed site for surface facilities near Yucca Mountain. Data from surface and downhole measurements will be used to revise approaches to predicting vibratory ground motion for surface and underground facilities. Motions from underground nuclear explosions (UNEs) are analyzed to develop the relationship between earthquakes and UNEs and for prediction of potential ground motion during repository operation. This activity supports studies identified in sections 8.3.1.8.2 and 8.3.1.17.2 of the SCP.

3.2.3 Without accurate benchmarks that are routinely surveyed, it is impossible to establish local rates of vertical or horizontal tectonic movement. Therefore, geodetic survey benchmarks have been permanently installed in and around the Yucca Mountain site in order to monitor present-day tectonic adjustments in the Yucca Mountain area. A 43-mile level line extends from Crater Flat on the west to Rock Valley on the east. A quadrilateral network has been installed across several faults in the immediate vicinity of Yucca Mountain. Biannual resurveys are conducted. These activities support studies identified in sections 8.3.1.8.2 and 8.3.1.17.2 of the SCP.

3.2.4 Determination of soil characteristics for purposes of soil modeling are made on a seasonal basis. These include dust-trap sampling, determining field capacity of soils, and periodic measurements of carbon dioxide and soil gases. The soil modeling is part of the overall climate modeling effort that addresses the effects changing climate may have on the hydrologic characteristics of the site. This activity supports studies identified in section 8.3.1.5.1 of the SCP.

3.2.5 Several trenches (Figure 4) have been excavated as part of the geologic, tectonic, and paleoclimatic studies. These trenches are sampled and mapped on an ongoing basis. Occasionally, it may be necessary to deepen or lengthen existing trenches to collect additional data and to prevent degradation of the trenches. These activities support studies described in sections 8.3.1.5.1, 8.3.1.8.2, and 8.3.1.17.2 of the SCP.

3.2.6 Geologic mapping is continuing in the vicinity of Yucca Mountain as part of the geologic, tectonic and igneous activity studies. This activity includes the collection of samples to provide dates which help to define rates of tectonic and igneous processes. This activity supports studies identified in sections 8.3.1.8.1, 8.3.1.8.2, 8.3.1.17.1 and 8.3.1.17.2 of the SCP.

3.3 Meteorological Activities.

A meteorological monitoring network has been established at the Yucca Mountain site and has been collecting data since December 1985 (Figure 5). Meteorological data is collected at five towers: four are 10 meters high, and one is 60 meters high. The four 10-meter towers continuously measure and record wind speed, wind direction, sigma theta (standard deviation of wind direction for determining atmospheric stability), relative humidity, and temperature. The fifth tower is instrumented at both the 10-meter and 60-meter levels. The data collected at this tower include the data stated above, plus sigma phi (standard deviation of vertical wind speed), net solar and terrestrial radiation, and precipitation.

These meteorological monitoring activities have begun to provide site-specific data for use in repository design studies, and eventually in the radiological safety assessments required by the NRC (10 CFR Part 60). These activities support studies identified in sections 8.3.1.2, 8.3.1.5.1 and 8.3.1.12 of the SCP.

3.4 Geomechanical Activities.

Laboratory testing, data reduction, and data analysis is ongoing for both thermal and mechanical properties. The next phase of planned testing for thermal properties is the determination of heat capacity of samples of the Topopah Spring Member of the Paintbrush Formation. These measurements are required for predicting the behavior of the host rock under the heat load generated by the waste emplaced in the repository. The next phase of planned mechanical measurements includes low-strain-rate testing, which will help determine the proper constitutive relationships for long-term conditions of the repository, and tensile strength testing, which is relevant to certain repository design analyses.

The NNWSI Project is conducting experiments in the G-Tunnel Underground Facility on Rainier Mesa. Although these experiments are not a part of site characterization, they are ongoing field activities that will guide the planning of the ESF and experiments. Therefore, a short description is provided. A principal ongoing effort in G-Tunnel is a mining evaluation experiment. Instrumented boreholes were used to determine mining-induced rock responses, and to develop improved techniques for controlled blasting in welded tuff. In situ stress and the modulus of deformation for welded tuff are also being determined at the G-Tunnel Facility. A thin slot is cut in the tuff and a flatjack is used to pressurize the side walls, moving them back to their original unrelaxed positions. Measurements obtained through these experiments provide useful experience in preparation for similar activities in the welded tuffs at Yucca Mountain.

These activities support thermomechanical studies and testing to establish repository design constraints and considerations described in section 8.3.1.15 of the SCP. These studies are important for establishing the stability of emplacement holes and drifts, particularly with regard to the requirements for retrievability.

Activities related to measurements of rock properties to be used in predictions of long-term behavior of the potential host rock under the heat load generated by the repository support studies described in section 8.3.1.14 of the SCP. These measurements are important for predicting long term rock mass response and fluid migration due to temperature effects and for establishing whether emplacement holes are likely to remain stable during the retrieval period.

3.5 Geochemical Activities.

Geochemistry of the rocks and water in contact with emplaced waste must be established in order to predict possible interactions for use in determining the lifetime of waste containers, and for predicting radionuclide transport if releases occur. The following activities, and the data reduction and analysis associated with them, are ongoing.

3.5.1 Near-Field Activities.

Two types of laboratory activities are being conducted to characterize the expected time- and temperature- dependent conditions in the hydrologic environment immediately adjacent to the waste packages. These investigations are short-term hydrothermal rock-water interaction experiments between samples from the Topopah Spring Member and water from Well J-13, and experiments to determine the rates and mechanisms of dehydration and rehydration of repository near-field rock in response to the expected thermal field generated by the emplaced waste. In addition, experiments are being conducted to measure the rate at which radionuclides released during waste-form tests are picked up by rock wafers and transported through the wafers. These activities support geochemistry studies for characterizing the very near-field waste package emplacement environment identified in section 8.3.4.2 of the SCP. These studies are important for predicting the performance of the metal container, and for establishing expected release rates.

3.5.2 Far-Field Activities.

There are seven laboratory studies being conducted to better characterize geochemical conditions in the far-field. These include dynamic transport, mineralogy/petrology, sorption, natural isotope, ground-water chemistry, solubility, and hydrothermal studies. The first five studies listed involve experimental work using natural samples previously collected from the Yucca Mountain site. The following sections provide a discussion of each of these five studies.

3.5.2.1 Dynamic Transport Experiments.

The objective of the dynamic transport experiments is to determine the rate of movement of radionuclides along potential flow paths from the repository to the accessible environment. Factors under study which may potentially affect rates of movement include diffusion, dispersion, anion exclusion, sorption kinetics, and colloid movement in the flow geometries and hydrologic conditions that are expected to exist at Yucca Mountain. Ongoing transport studies include column experiments using crushed Yucca Mountain tuff, unsaturated solid tuff core, and fractured core. These column studies will provide experimentally determined hydrologic, physical, and chemical parameters needed to determine the rates of movement of various chemical species and aid in the prediction of radionuclide transport. In addition, diffusion experiments are being conducted using tuff wafers and rock beakers made from Yucca Mountain tuff. These experiments support studies described in section 8.3.1.3 of the SCP.

3.5.2.2 Mineralogy-Petrology Activities.

The objectives of the mineralogy-petrology activities are to describe the host rock mineralogy and petrology by establishing the mineralogic and petrographic stratigraphy including the mineralogic variability, and to provide descriptions of rock and fracture-fill petrology and mineralogy along potential transport pathways to the accessible environment. Ongoing activities include (1) studies of the potential for mineral alteration; (2) characterization of the fracture mineralogy using electron microscopy, x-ray diffraction, and radiometric dating on rock samples from cores, outcrops, and trenches; (3) mineral stability studies on clay, zeolites, and glasses that are important to the natural retardation system; and (4) studies of host-rock mineralogy-petrography using samples from drill cores and outcrops. These activities support studies described in section 8.3.1.3.2 of the SCP.

3.5.2.3 Sorption Activities.

The objective of the sorption activities is to provide data as input to the prediction of radionuclide movement from the repository to the accessible environment. Ongoing experiments include batch, crushed tuff column, and circulating column sorption experiments using tuff samples representative of the various mineralogic and stratigraphic characteristics of Yucca Mountain. Sorption coefficients of actinides and other important waste elements will be determined and used to estimate radionuclide retardation. Another sorption task involves studying the effects of microbes on sorption. This task involves determining the growth properties of microbes taken from soil samples collected from drilling locations at Yucca Mountain. Drilling fluids are used as the energy source for microorganism growth. Sorption coefficients of radionuclides on tuff in the presence of microbes will be determined. These activities support studies described in section 8.3.1.3.4 of the SCP.

3.5.2.4 Natural Isotope Chemistry Activities.

The objective of the activities related to natural isotope chemistry is to provide data on infiltration rates at Yucca Mountain. Chlorine-36 to total chlorine ratios are measured in Yucca Mountain soil samples, and changes in the ratio with depth are used to estimate infiltration rates. These activities support studies described in sections 8.3.1.3.1 and 8.3.1.2.2 of the SCP.

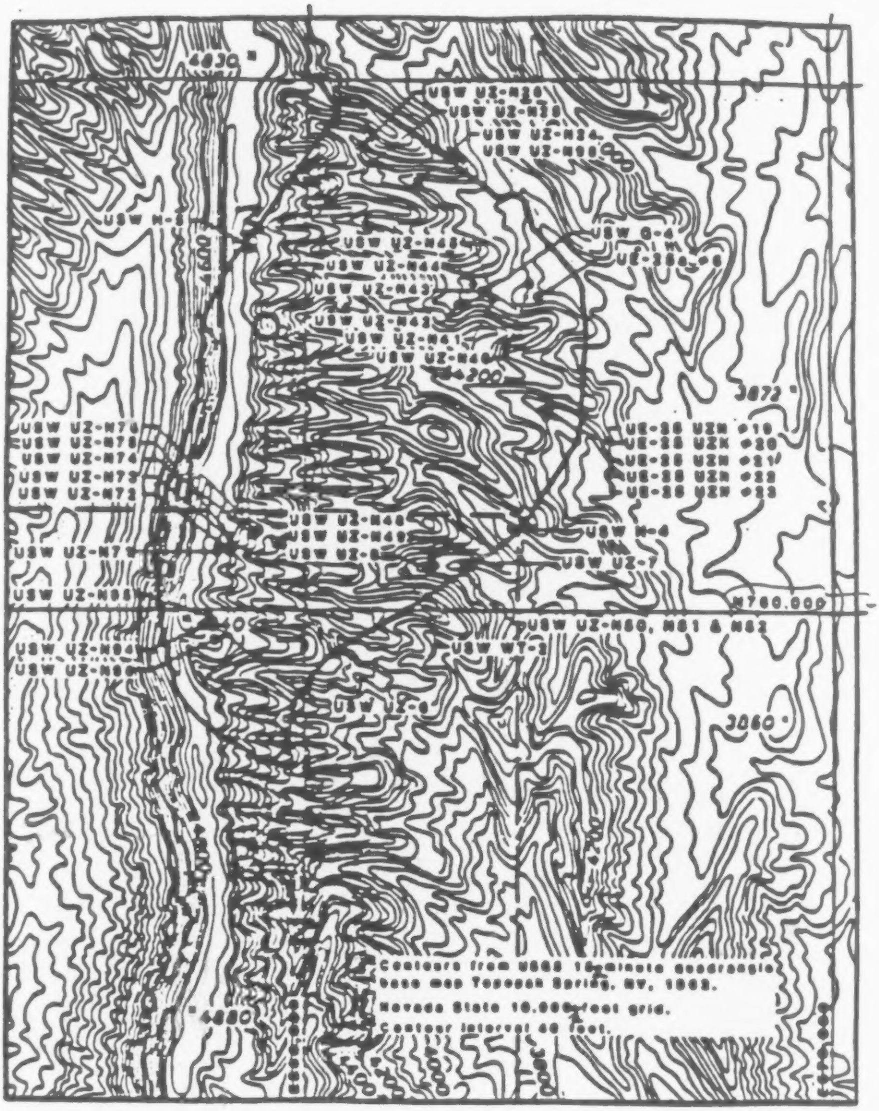
3.5.2.5 Ground Water Chemistry Activities.

The objectives of ground-water chemistry studies are to analyze the composition and the geochemical controls of the composition of pore waters in the unsaturated zone and in the saturated zone in and near Yucca Mountain. The saturated zone water chemistry has been well characterized and samples from Well J-13 are being used in the sorption and dynamic transport geochemistry tasks. Characterization of pore waters from unsaturated zone samples is just beginning. These fluids will be extracted by applying pressure to the core sample, by centrifugation of the crushed core sample, or by vacuum distillation. These activities support studies described in section 8.3.1.3.1 of the SCP.

4.0 Planned Site Characterization Activities

The current schedule for the NNWSI Project assumes that the SCP will be completed in April 1987. At this time, the NNWSI Project does not expect to begin any new site characterization activities prior to issuance of the SCP.

Before any new site characterization activities can be started, the DOE must have appropriate agreements with the Bureau of Land Management for continued land access. DOE must also obtain the necessary environmental permits to comply with all Federal, State, and local environmental requirements during site characterization. In addition, the DOE must prepare study plans in consultation with the State and the NRC.


4830
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USW UZ-N38
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USW UZ-N35
USW H-5
4600
USW UZ-N45
USW UZ-N44
USW UZ-N43
USW UZ-N42
USW UZ-N41
USW UZ-N40
4200
USW G-4
UE-25a #6
3872
USW UZ-N76
USW UZ-N75
USW UZ-N74
USW UZ-N73
USW UZ-N72
UE-25 UZN #19
UE-25 UZN #20
UE-25 UZN #21
UE-25 UZN #22
UE-25 UZN #23
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USW UZ-N49
USW UZ-6
USW H-4
USW UZ-7
USW UZ-N71
USW UZ-N55
N760,000
USW UZ-N60, N61 & N62
USW WT-2
USW UZ-N64
USW UZ-N66
USW UZ-8
3860
4680
Contours from USGS 15-minute quadrangle base map Topopah Spring, NV, 1962.
Nevada State 10,000-foot grid.
Contour interval 40 feet.

Figure 1. Drillholes located within the outline of the perimeter drift.

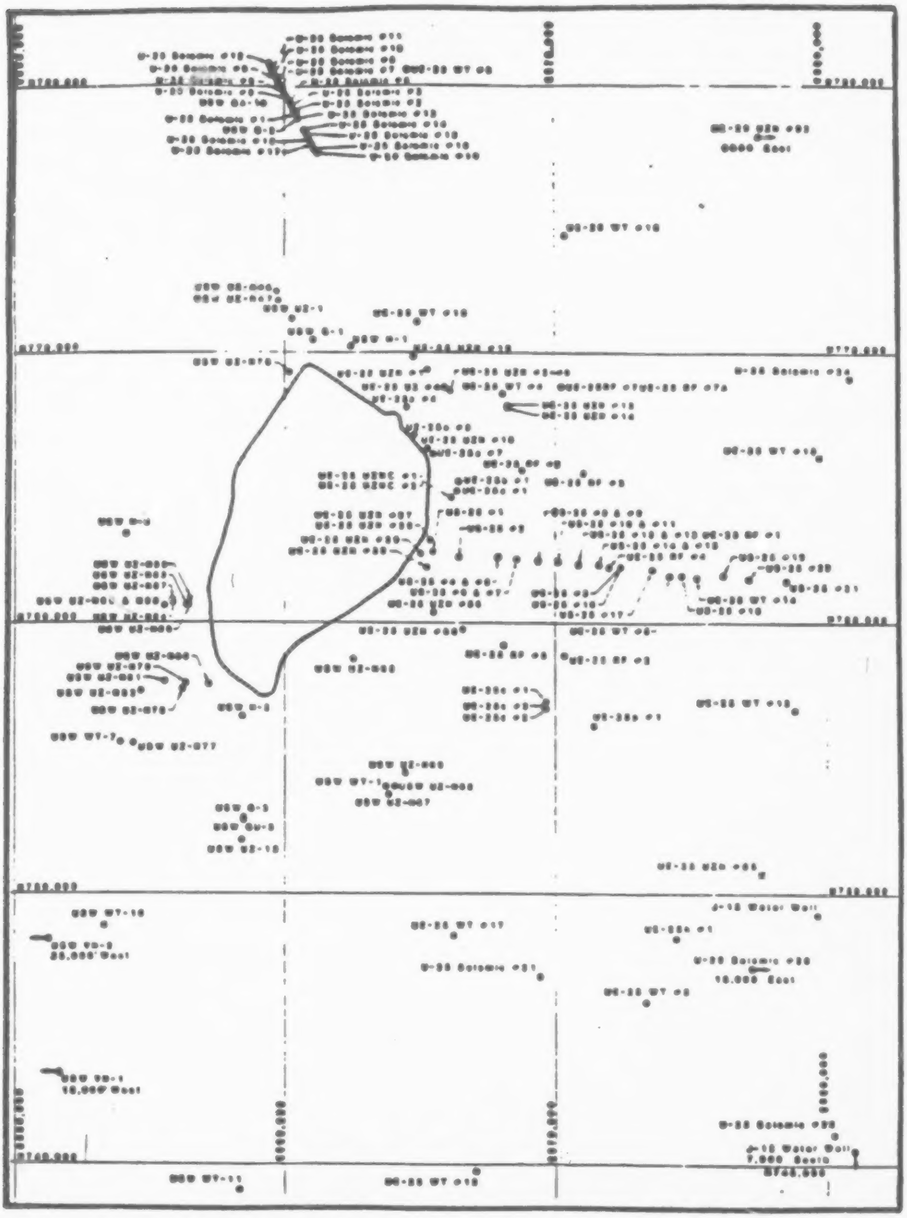

Figure 2. Drillholes located outside of the perimeter drift but within 10km of the perimeter drift.

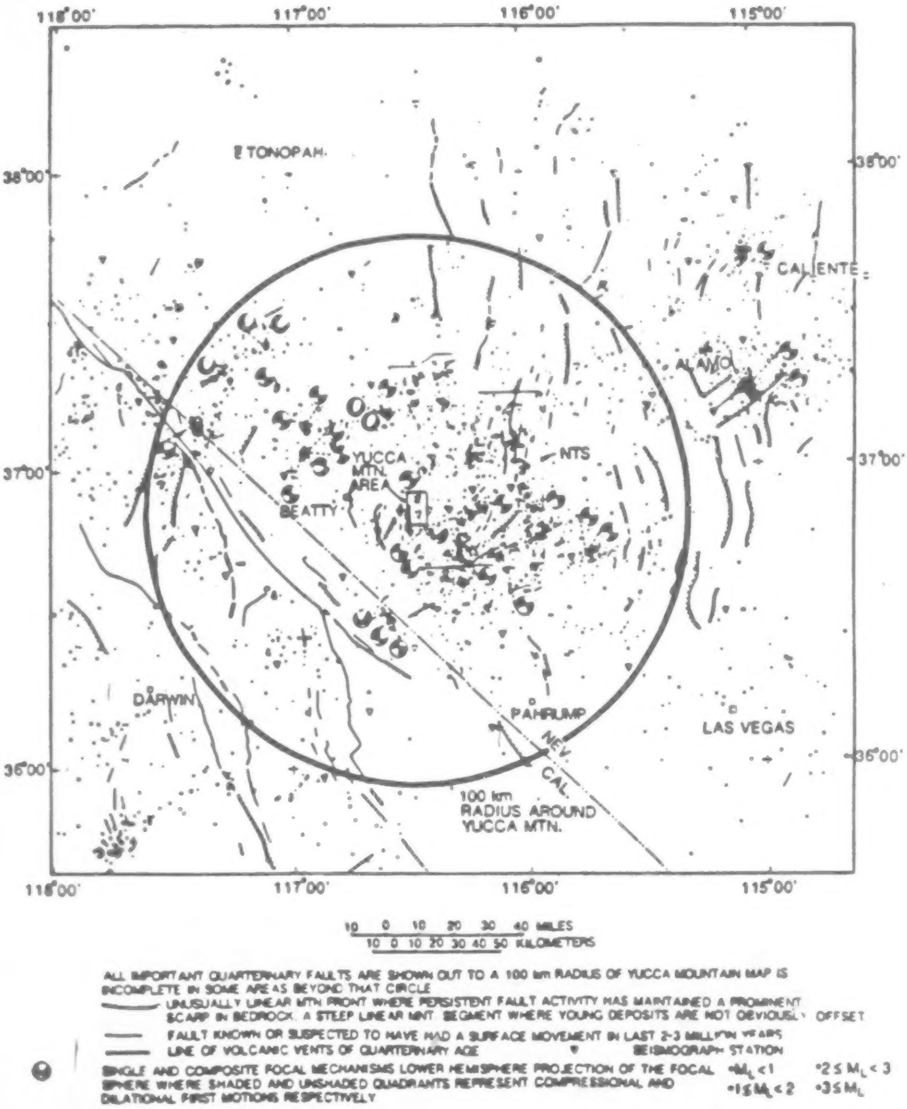
118°00'
117°00'
116°00'
115°00'
38°00'
37°00'
36°00'
TONOPAH
CALIENTE
ALAMO
YUCCA MTN. AREA
NTS
BEATTY
DARWIN
PAHRUMP
LAS VEGAS
NEV.
CAL.
100 km RADIUS AROUND YUCCA MTN.
10 0 10 20 30 40 MILES
10 0 10 20 30 40 50 KILOMETERS
ALL IMPORTANT QUARTERNARY FAULTS ARE SHOWN OUT TO A 100 km RADIUS OF YUCCA MOUNTAIN MAP IS INCOMPLETE IN SOME AREAS BEYOND THAT CIRCLE
UNUSUALLY LINEAR MTN FRONT WHERE PERSISTENT FAULT ACTIVITY HAS MAINTAINED A PROMINENT SCARP IN BEDROCK. A STEEP LINEAR MNT. SEGMENT WHERE YOUNG DEPOSITS ARE NOT OBVIOUSLY OFFSET
FAULT KNOWN OR SUSPECTED TO HAVE HAD A SURFACE MOVEMENT IN LAST 2-3 MILLION YEARS
LINE OF VOLCANIC VENTS OF QUARTERNARY AGE
SEISMOGRAPH STATION
SINGLE AND COMPOSITE FOCAL MECHANISMS LOWER HEMISPHERE PROJECTION OF THE FOCAL SPHERE WHERE SHADED AND UNSHADED QUADRANTS REPRESENT COMPRESSIONAL AND DILATIONAL FIRST MOTIONS RESPECTIVELY
$M_L < 1$
$1 \leq M_L < 2$
$2 \leq M_L < 3$
$3 \leq M_L$

Figure 3. Regional Map showing locations of the regional seismic network.

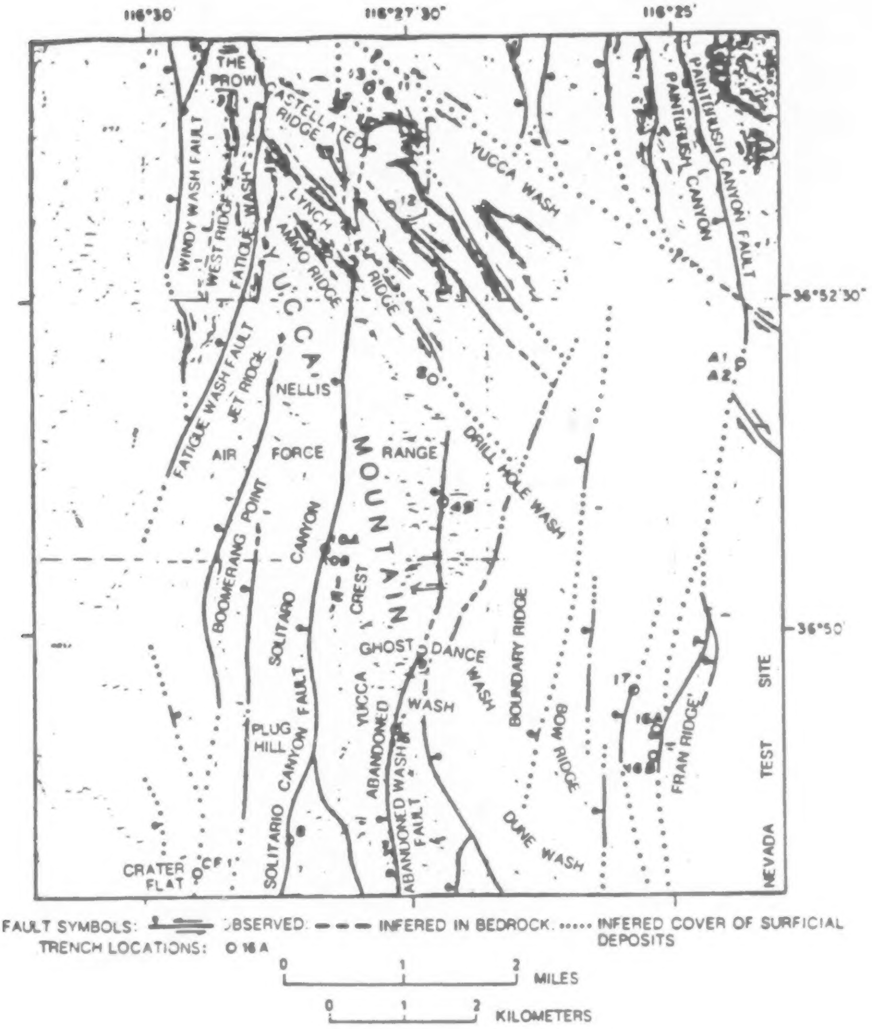
116°30'
116°27'30"
116°25'
36°52'30"
36°50'
THE PROW
CASTELLATED RIDGE
YUCCA WASH
PAINTBRUSH CANYON
PAINTBRUSH CANYON FAULT
WINDY WASH FAULT
WEST RIDGE
FATIGUE WASH
LYNCH
AMMO RIDGE
RIDGE
12
13
YUCCA
FATIGUE WASH FAULT
JET RIDGE
NELLIS
AIR
FORCE
RANGE
MOUNTAIN
DRILL HOLE WASH
BOOMERANG POINT
CANYON
SOLITARIO
CREST
GHOST DANCE WASH
BOUNDARY RIDGE
BOW RIDGE
FRAN RIDGE
PLUG HILL
SOLITARIO CANYON FAULT
YUCCA
ABANDONED WASH
ABANDONED WASH FAULT
DUNE WASH
CRATER FLAT
CF
A1
A2
17
16A
14
NEVADA TEST SITE
FAULT SYMBOLS:
OBSERVED
INFERED IN BEDROCK
INFERED COVER OF SURFICIAL DEPOSITS
TRENCH LOCATIONS: O 16 A
0
1
2
MILES
0
1
2
KILOMETERS

Figure 4. Trenches located along faults at Yucca Mountain interpreted from geologic mapping

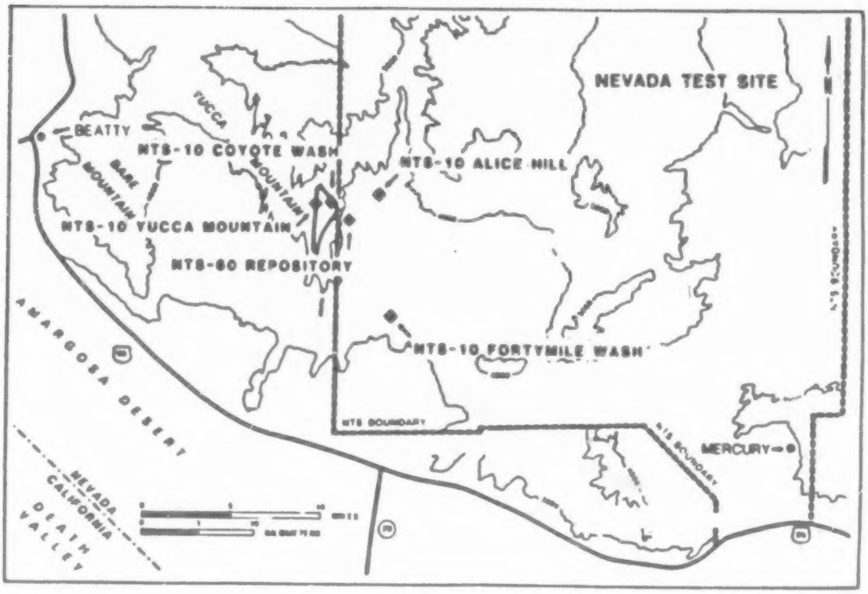
NEVADA TEST SITE
BEATTY
NTS-10 COYOTE WASH
YUCCA MOUNTAIN
BARE MOUNTAIN
NTS-10 ALICE HILL
NTS-10 YUCCA MOUNTAIN
NTS-60 REPOSITORY
NTS-10 FORTYMILE WASH
AMARGOSA DESERT
NTS BOUNDARY
MERCURY
NEVADA
CALIFORNIA
DEATH VALLEY
N

Figure 5. Meteorological monitoring sites

ENCLOSURE 1

1-16-87

REVISED SCP CHAPTER 8 STRUCTURE *

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SCP Section #	Short Title	Issue or IN
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SCP Section #	Short Title	Issue or IN
8.3.5.20	Techniques Requiring Development	
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8.3.5.20.2	Data Required	
8.3.5.20.3	Plans to Verify and Validate	
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QUESTIONS FROM CHAIRMAN JOHNSTON

Nevada Site

Question 2: In December, Jerry Szymanski, a DOE scientist, presented a report to DOE raising some concerns about the Nevada site. What is the issue and what is DOE doing to address these concerns? Haven't these concerns already been factored into the site characterization plans? Isn't this an issue that is appropriately evaluated during site characterization? Isn't it true that there will be no hard and fast answers on the technical issues until an exploratory shaft facility is constructed and testing is done at depth? Should we be concerned about the Szymanski report?

Answer: A draft report titled "Conceptual Considerations of the Death Valley Groundwater System with Special Emphasis on the Adequacy of This System to Accomodate [sic] the High-Level Nuclear Waste Repository" was prepared by Mr. Szymanski, as requested by the Project Manager of the Department's Nevada Nuclear Waste Management Project Office, and delivered to his supervisors on December 22, 1987. DOE requested Mr. Szymanski to prepare this report so that his views could be better understood and evaluated. This draft report is currently undergoing internal DOE review.

The issue regarding the draft report pertains to the author's perception of the appropriate conceptual hydrologic model for the Yucca Mountain site. In a summary fashion, Mr. Szymanski believes that tectonic (primarily volcanic-thermal and strain-faulting) and climatic factors act in a

Answer 2 (cont'd)

synergistic fashion to control the hydrologic system at the site, and that the response of the hydrologic system to tectonic and climatic processes may be more severe than has been assumed for the conceptual models used to develop the Site Characterization Plan. Currently, as noted above, DOE is in the process of performing a detailed review of Mr. Szymanski's report. Additionally, a meeting with the Nuclear Regulatory Commission and the State occurred April 11-14, 1988, to discuss the general topic of conceptual models which should be considered for the Yucca Mountain site. Once the detailed review is completed and the meeting has occurred, a decision will be made whether additional action is required.

DOE believes that most, if not all, of the Szymanski concerns and the suggested field work have been considered in the development of the Consultation Draft of the Site Characterization Plan. One of the products of the detailed review of the draft will be to determine if any additional field work is warranted to address the concerns raised by Mr. Szymanski.

Answer 2 (cont'd)

The purpose of site characterization will be to gather data and perform analyses to determine the adequacy of the site in meeting all applicable regulatory requirements. In determining if the site meets regulatory requirements, it will be necessary to evaluate all credible conceptual models pertaining to the isolation characteristics of the site.

To a large extent site suitability will be dependent on the results of exploratory shaft facility testing. This is not to say that surface investigations are secondary; the full evaluation of site suitability will be dependent on the integration of data gathered both from surface and subsurface investigations.

It is important that all credible conceptual models pertaining to the ability of the Yucca Mountain site to isolate wastes, including Mr. Szymanski's, be identified and evaluated.

Currently, conceptual models are used to help generate testing plans for site characterization. It will be important during the course of site characterization to determine, as data is collected and analyzed, the model that best

Answer 2 (cont'd)

describes the site in order to appropriately judge site suitability.

QUESTIONS FROM CHAIRMAN JOHNSTON

Nevada Site

Question 3: If everything goes well, what is the most optimistic time schedule for completion of site characterization at the Nevada site? When does the Department estimate that a repository would be ready to begin accepting spent fuel?

Answer: The current projected schedule calls for the completion of testing for input to the Draft Environmental Impact Statement in the second quarter of 1993. Additional testing to be done after that date will probably be confirmatory testing and evaluation as part of the performance confirmation baseline.

A site recommendation report is to be submitted to the President in 1994. The license application will be submitted to the Nuclear Regulatory Commission in 1995, with receipt of a construction authorization expected in 1998.

The current schedule described in the Mission Plan Amendment calls for the first acceptance of spent fuel in the year 2003.

QUESTIONS FROM SENATOR JOHNSTON

URANIUM ENRICHMENT

Question 1: In FY 1989, DOE is proposing to return enrichment revenues to the general fund of the U.S. Treasury, rather than have these revenues earmarked to offset enrichment appropriations. Therefore, if revenues are greater than the outlays for the enrichment program, there will be a repayment of the so-called "unrecovered costs" of the enrichment program. How much of these unrecovered costs--as you calculate them--will be repaid in 1989 and how much has been repaid through FY 1988?

Answer: At the end of FY 1987, the unrecovered Government investment was $3,019 million. FY 1988 revenue collections are estimated to exceed outlays and reduce the unrecovered Government investment in the uranium enrichment program by about $2.6 million. The total amount of revenues returned to the Treasury to offset unrecovered costs in the DOE uranium enrichment program through the end of FY 1988 will then be $195.1 million. FY 1989 revenue collections are estimated to exceed outlays and reduce the unrecovered Government investment in the uranium enrichment program by an additional $91.2 million.

QUESTIONS FROM SENATOR JOHNSTON

URANIUM ENRICHMENT

Question 2(a): DOE is currently producing enrichment services at the gaseous diffusion plants at levels that are lower than current contractual requirements, and meeting the rest of the demand through the use of an enriched uranium inventory. What are the "factory production costs" at your current production level per separative work unit (SWU)?

Answer: Factory costs consist of the cost of used power, other direct operating plant costs, plus plant depreciation. For FY 1989, factory costs will be $62 per SWU.

QUESTIONS FROM SENATOR JOHNSTON

URANIUM ENRICHMENT

Question 2(b): What is your current price? (If lower than factory cost, how is that possible)?

Answer: The current selling price is $117 per SWU for up to 70 percent of a customers' total requirements and $90 per SWU for the remaining requirements.

QUESTIONS FROM SENATOR JOHNSTON

URANIUM ENRICHMENT

Question 2(c):	How large will your inventory of enriched uranium be at the end of FY 1988? What is a minimum working level for that inventory?
Answer:	At the end of FY 1988, our total SWU inventory will be about 7.5 million SWU. The minimum working inventory level is 4.6 million SWU.

QUESTIONS FROM SENATOR JOHNSTON

URANIUM ENRICHMENT

Question 2(d): Given current operating plans, when do you expect to deplete the inventory down to the minimum working level? And what will happen to the cost per SWU and price per SWU when that minimum working level is reached?

Answer: We expect to reach the minimum working level by the end of FY 1989. After that, annual production levels will be at levels equal to annual sales. At higher production levels. the cost per SWU increases because the gaseous diffusion plants use power less efficiently. This expected increase in production costs will not necessarily mean that prices will increase. The price we charge for separative work recovers the Government's costs over the next 10-year period. The 10-year DOE operating plan was used in arriving at the $117 per SWU price charged in FY 1989 and already reflects the higher production costs anticipated after we reduce our inventory to a 120-day working level.

QUESTIONS FROM SENATOR JOHNSTON

URANIUM ENRICHMENT

Question 3:	Please comment on the recent agreement between the Department of Energy and the Tennessee Valley Authority relating to contractual liabilities for power not taken. In particular, how much in long-term savings has been afforded to the DOE by the agreement.
Answer:	The settlement reached between TVA and DOE regarding the demand charge dispute provided significant benefits to DOE's enrichment program.

DOE's total liability for TVA demand charges is limited to about $1.8 billion under a fixed payment schedule from FY 1987 through FY 1994. When compared to the amount which TVA was most likely to assess DOE, the settlement represents a savings of about $650 million over this 8-year period. A large portion of this savings--about $275 million--will be realized in the first 3 years alone. The fixed payment schedule means that DOE will no longer be subject to an ever-growing, open-ended obligation caused by the TVA ratemaking process. Finally, the settlement enhances the uranium enrichment enterprise's ability to manage its financial liabilities and, therefore, compete more effectively in international markets.

QUESTIONS FROM SENATOR JOHNSTON

URANIUM ENRICHMENT

Question 4(a): DOE is planning to embark on a four-year program aimed at demonstrating a full-scale AVLIS production facility. DOE asked for no funds for AVLIS IN FY 1988. Why the policy change?

Answer: Our long-term goal is to privatize the uranium enrichment business. We have concluded that the AVLIS program is an essential component to any successful privatization effort.

QUESTIONS FROM SENATOR JOHNSTON

URANIUM ENRICHMENT

Question 4(b): Please provide the details of the demonstration plan.

Answer: We are preparing a detailed demonstration plan and will submit a copy of the AVLIS program plan when it is completed.

QUESTIONS FROM SENATOR JOHNSTON

URANIUM ENRICHMENT

Question 4(c): What do you expect the total estimated cost of the demonstration to be?

Answer: We estimate that the cost of completing the demonstration of the AVLIS process will be about $500 million.

QUESTIONS FROM SENATOR JOHNSTON

URANIUM ENRICHMENT

Question 5(a): There seems to be two uncertainties in the DOE budget: a Supreme Court case originally brought by uranium producers and an Internal Revenue Service audit of two DOE power suppliers. We would like more information on these financial uncertainties. What percentage of foreign uranium is the Department currently enriching?

Answer: For 1987, approximately 50 percent of the uranium provided to DOE for enrichment by its domestic customers is of foreign origin. Approximately 66 percent of the total uranium enrichment by DOE for all its customers, both foreign and domestic, was of foreign origin.

QUESTIONS FROM SENATOR JOHNSTON

URANIUM ENRICHMENT

Question 5(b): What impact would a decision against DOE in the Supreme Court case have on projected annual revenues for the enterprise? Please provide estimates of this effect due to both foreign and domestic customers.

Answer: The Department of Energy's current estimates reflect that over $500 million in revenues per year from domestic customers could be lost as a result of an adverse court decision on the miner's lawsuit case. No immediate impact would be encountered by DOE from its foreign enrichment customers; however, any substantial loss of domestic sales would adversely affect DOE's price competitiveness and, therefore, reduce the likelihood of future sales to foreign customers. Serious intangible impacts, such as lost customer confidence in our ability to remain a reliable supplier, would be encountered.

QUESTIONS FROM SENATOR JOHNSTON

URANIUM ENRICHMENT

Question 5(c):	What percentage of current revenues does this represent? What percentage of the world market share does this represent?
Answer:	DOE estimates that potential losses from an adverse Supreme Court decision could reach 50 percent of DOE's total annual commercial revenues: $500 million would represent approximately 85 percent of current domestic commercial revenue, and approximately 50 percent of DOE's total commercial revenue.

QUESTIONS FROM SENATOR JOHNSTON

URANIUM ENRICHMENT

Question 5(d):	How does this affect the competitiveness of the enterprise in the domestic market?
Answer:	It would render DOE's enrichment services noncompetitive and jeopardize our ability to maintain, or ever recapture, domestic customer business.

QUESTIONS FROM SENATOR JOHNSTON

URANIUM ENRICHMENT

Question 5(e): **What are the liabilities relating to the IRS audit? When is final disposition of this issue expected?**

Answer: DOE faces potential liability because of the cost-sharing nature of the contracts with OVEC and EEInc. The cost to generate power is shared between DOE and the power suppliers' sponsors on the basis of the amount of power purchased by each party. IRS determinations could increase the cost of power which, in turn, could increase DOE's costs.

DOE's potential liability is estimated to be about $90 million, excluding interest, split $10 million for EEInc and $80 million for OVEC.

Final judgement on the EEInc lawsuit against the IRS took place on February 29, 1988. We expect to receive details of the settlement from EEInc later this month.

OVEC is pursuing the IRS administrative procedures available to it to appeal its audit. We anticipate that the IRS audit of OVEC will be completed this year.

QUESTIONS FROM SENATOR JOHNSTON

URANIUM ENRICHMENT

Question 6: Please provide a historical record of the amount of both high-assay and low-assay separative work produced since the commencement of operation of the gaseous diffusion plants to the present. Do you believe that any potential liabilities should be allocated on this basis?

Answer: The historical record of separative work delivered to commercial and U.S. Government customers is presented in the following table. Essentially all of the commercial deliveries were in the form of low assay uranium, whereas Government deliveries were high assay uranium. We believe that all of the costs associated with remediation work at the high assay production facilities at the ORGDP (the K-25 and K-27 buildings) and Portsmouth (the X-326 building) should be borne by the Government. The remediation costs associated with the low assay gaseous diffusion facilities at Oak Ridge (the K-29, K-31, and K-33 buildings), Portsmouth (the X-330 and X-333 buildings), and Paducah should be apportioned based on the relative amounts of separative work delivered to commercial and Government customers from the total enrichment complex. Under this approach, the commercial and Government customers are currently each responsible for approximately 50 percent of the remediation costs for these facilities.

(The information follows:)

SEPARATIVE WORK DELIVERIES
(Thousands of SWU)

Fiscal Year	Commercial	Government	Total
1944	-	2	2
1945	-	55	55
1946	-	200	200
1947	-	325	325
1948	-	386	386
1949	-	444	444
1950	-	503	503
1951	-	586	586
1952	-	1,405	1,405
1953	-	2.203	2.203
1954	-	4.507	4.507
1955	-	8.021	8.021
1956	-	13,706	13.706
1957	-	14.541	14.541
1958	-	14,919	14.919
1959	438	15.211	15.649
1960	433	15.893	16.326
1961	416	16.279	16.695
1962	310	15.712	16.022
1963	291	15.245	15,536
1964	328	12.144	12.472
1965	635	9.505	10.140
1966	1,201	8.433	9.634
1967	978	7.076	8.054
1968	1,045	6,094	7.139
1969	1.935	2.142	4.077
1970	5.877	-915	4.962
1971	9,638	-755	8,883
1972	7,501	-2.082	5.419
1973	9.500	-1.323	8.177
1974	13,865	-1.424	12.441
1975	7.217	-207	7.010
1976	9,708	442	10.150
1977	9,099	1.422	10.521
1978	11.234	1.174	12.408
1979	13,922	871	14.793
1980	9.995	820	10.815
1981	10,480	1,360	11,840
1982	13,698	1,537	15,235
1983	13.798	1.277	15,075
1984	10,778	1.560	12,338
1985	11.451	1.447	12,898
1986	9.769	1.820	11,589
1987	8.171	1.866	10.037
TOTAL	193.711	194.427	388.138

Clean Coal Technology Program

Question 1:	DOE was successful in getting an advance appropriation in FY 1989 of $525 million to be added to $50 million from FY 1988 for a second clean coal solicitation. Some in Congress and elsewhere have registered a strong desire to "refocus" the clean coal program to concentrate only on those technologies that are considered "retrofit," because they believe that these technologies will result in near-term emission reductions. Does the Department of Energy share the view that the program should focus only on the demonstration of retrofit technologies? If not, why should the program's focus be more broad?
Answer:	The Department does not share the view that the program should focus only on the demonstration of retrofit technologies. The Department believes that a diversity of technologies are needed to address environmental and other issues facing this country. For power generation, repowering technologies can improve the performance, thermal efficiency and dramatically improve the economics of operation. They can be used to minimize the system's environmental impact and can be added to the utility in modular fashion to permit the utility to more closely match supply and demand requirements. They can be designed to permit the use of a variety of coals, and they can be used to repower existing coal-fired boilers to extend plant life, increase the plant's power output and, at the same time, dramatically reduce emissions.

Retrofit technologies are particularly suited for reducing the amounts of sulfur dioxide and nitrogen oxides as well as other pollutants discharged from coal burning systems. They demonstrate the potential of greatly improved economics when compared with conventional control systems and they can be considered as pollution control options for both the existing older boiler population as well as for new boilers in facilities being constructed or planned.

Therefore, both retrofit and repowering technologies need to be developed and demonstrated to provide the suite of options energy users must have to effectively resolve in the most efficient and environmentally responsive manner the wide range of site specific issues limiting the use of coal as a source of energy.

Clean Coal Technology Program

Question 2: The President has accepted the recommendations of his Special Task Force on Regulatory Relief that were designed to encourage the use of promising new clean coal technologies by the utilities and others. Please elaborate on these recommendations and how the Administration intends to implement them? Is the report containing these recommendations available? If not, when will it be available?

Answer: The three recommendations are that:

(1) DOE, in its Innovative Clean Coal Technology Program, should consider giving preference in the award of Federal funds for demonstration projects to projects located in states which offer certain regulatory incentives to encourage such technologies;

(2) EPA, in managing the Nation's air quality, should encourage greater use of "bubbles" to reduce the cost of pollution control, encourage complementary use of "bubbles" and waivers for innovative technologies, expand commercial demonstration permits for innovative technologies, and encourage states to consider greater ozone reduction via inter-pollutant "trading"; and

(3) FERC, in setting rates for electric utilities engaged in wholesale electricity trans-

> actions, should implement a five-year demonstration program allowing rate incentives to encourage more rapid deployment of innovative technologies.

The first recommendation was completed by including the following statement in the DOE Program Opportunity Notice, "Innovative Clean Coal Technology Program," issued on February 22, 1988;

"5.6 OTHER CONSIDERATIONS

In the project selection process, DOE will consider giving preference to projects located in states for which the rate-making bodies of those states treat the innovative clean coal technologies the same as pollution control projects or technologies.

The inclusion of this project selection consideration is intended to encourage states to utilize their authorities to promote the adoption of innovative clean coal technology projects as a means of improving the management of air quality within their areas and across broader geographical areas. Recognizing the benefits of pollution control to society, some states offer utilities more favorable rate treatment for pollution control equipment than for other utility investments.

States which offer such incentives to innovative clean coal technologies may also serve to offset a portion of the additional risk inherent in demonstrations of new technologies."

Implementation of the second recommendation is the responsibility of the Environmental Protection Agency. Specifically, their preliminary actions fall into the following areas:

- "New-new" Bubbles -- encourage greater use of the recently promulgated policy of allowing emissions trading between two sources subject to certain new source performance standards (NSPS). This action offers possibilities for reducing total compliance costs by applying lower cost technology to one source and making up any shortfall in meeting NSPS by more stringent controls of the other source.

- Complementary Use of "New-new" Bubbles and Innovative Technology Waivers -- encourage use of these existing emission trading options by utilities that are uncertain whether an ICCT will actually achieve NSPS levels before a waiver expires. EPA shall administer innovative technology waivers and NSPS bubbles to complement each other. If it appears that after a waiver expires it might be difficult for the source to meet NSPS with the innovative technology, an NSPS bubble could be issued relaxing the NSPS for that source in exchange for tightening the NSPS for the other source.

- Commercial Demonstration Permits -- expand the availability and applicability of the present commercial demonstration permits that allow innovative control technologies for utility boilers to meet less stringent standards than required for other new sources. EPA shall expand the availability of these permits for utilities as new ICCT's are developed. The technologies to be considered and the typical size unit for permitting shall be recommended by DOE to EPA. The permit emission limits would be set by standard EPA rulemaking procedures in consultation with DOE and may be less stringent than the general NSPS requirement. This permit level would be in force for the duration of the unit's operation.

  DOE, in consultation with EPA, shall conduct a study to determine how to assure that this process will be used to stimulate early introduction of successfully demonstrated innovative technologies.

- *NOx Control Strategies for Ozone* -- issue guidance encouraging those areas of the country that can reduce ozone by controlling NO_x to examine the potential role of nitrogen oxides (NO_x) reductions in place of more expensive volatile organic compound (VOC) reductions in State Implementation Plans (either through interpollutant emission trades or direct State regulatory actions). EPA to issue guidance to states outlining the conditions under which they should consider NO_x controls as part of their State Implementation Plans (SIP) to achieve the ozone standard as expeditiously as possible. EPA shall also recommend that states consider adopting market-oriented trading programs (consistent with EPA's ozone strategy) once the SIP is in place.

The third Task Force recommendation is that FERC adopt a demonstration program under which applicants in ratemaking proceedings before that Commission could request and receive, if qualified, any one or more of the following incentives: incentive rates of return, allowances for construction work in progress, and/or accelerated amortization. These incentives could be used to help attain the goal of providing lower costs of electric power to ratepayers, while fostering the use of cleaner, more efficient technologies in the generation of that power. With this objective in mind, the Task Force made its recommendation, subject to the imposition of the following conditions or restrictions on the program: (1) The applicants for incentives would be required to show that the new class of technology (as opposed to the specific unit under consideration for receipt of the incentives), in its ultimate configuration, would be reasonably likely to be at least 15 percent less expensive than existing technologies. (2) The program would allow the incentives to be provided to no more than four units in each class of technology. (3) The program would be established on a temporary basis (5 years), after which an evaluation of its results would be conducted in order to determine whether an extension would be warranted.

The third recommendation would be implemented beginning with the following preliminary actions: The Department of Energy, under its authority in Section 403 of the DOE Organization Act, would propose rules under which FERC could provide the identified regulatory incentives for innovative emission control technologies including innovative clean coal technologies, to qualifying applicants. FERC would be responsible for completing the rulemaking initiated by DOE and for implementing any final rules. Accordingly, DOE intends to seek FERC rulemakings in one or more of the following areas:

- Incentive Rate of Return -- To establish an incentive rate of return for innovative emission control technologies (coal and non-coal) that recognizes their inherent risks and potential benefits. FERC already provides this incentive in certain circumstances. Under such a rule, FERC could grant a special two part rate of return for innovative emissions control technologies (using coal or other fuels) that (a) would recognize the risk of building first generation technologies, and (b) reward the exceptional performance expected of innovative technologies and, in lieu of retrospective prudence reviews, prospectively penalize failures to achieve expected performance. The first part of the rate would simply reward the taking of risk, while the second part would offer a combination of carrots and sticks for various levels of performance. Performance benchmarks would be set for each innovative technology with respect to air pollution control, capital costs, and availability. Increments above and below the benchmarks would have associated additional rewards or penalties.

Facilities would be eligible to begin receiving incentives after promulgation of the final FERC regulations and for 5 years thereafter. During this 5-year period, DOE will evaluate the merits of the program and consider whether to propose its extension beyond the initial 5 years.

- Allowance for Construction Work in Progress ("Full CWIP") -- To include construction costs for innovative emission control technologies in the rate base as incurred. Full CWIP is currently allowed for pollution control costs; it should reduce "rate shock" for consumers. Under a ruling providing this incentive, FERC could allow the inclusion of all capital costs for innovative emission control technologies (using either coal or other fuels) in the applicant's rate base as incurred (full CWIP), as FERC now treats such costs of pollution control equipment. This incentive, which would represent a change in existing FERC rules for CWIP, would be implemented in the same manner, apply to the same technologies, and be available for allowance by FERC over the same period of time as the incentive rate of return.

- Accelerated Amortization -- To allow a 15 to 20 year amortization period to recover the capital costs of innovative emission control technologies. Currently, the typical amortization period is 30 years. Under a rule providing such an incentive, FERC could apply a 10 to 20 year amortization period to innovative emission control technologies (using either coal or other fuels). This incentive, which would represent a change in the FERC rules for amortization, would be also implemented in the same manner, apply to the same technologies and be available for allowance by FERC over the same period of time as the incentive rate of return.

One of the objectives of the FERC program would be to lower costs of electric power to ratepayers while fostering the use of cleaner and more efficient technologies. With this objective in mind, the Task Force recommended that FERC establish all three of the incentives initially as a demonstration program with the following three limitations: First, applicants should be required to show that the new class of technology, in its ultimate configuration, would be reasonably likely to produce levelized costs at least 15 percent less expensive than existing technologies. This cost test is not meant to use the economics of the specific unit being considered for incentives. Second, the program would cover no more than four units in each class of technology. Third, the program would be established on a temporary basis with an evaluation of its merits to be undertaken after 5 years for the purpose of potential extension.

The report containing these recommendations is not yet available. It is expected to be finalized and released next month.

Clean Coal Technology Program

Question 3: If Congress appropriates $1.775 billion to the clean coal program, as requested by the President, will regulatory changes -- like those proposed by the President's Task Force on Regulatory Relief -still be required to assure the commercialization of clean coal technologies? If so, why?

-- How crucial are these regulatory changes to the widespread adoption of these technologies in the private sector leading to commercial deployment of the technologies?

-- Why are these changes not contained in the "Program Opportunity Notice," the final request for proposals for the program?

Answer: The funding requested by the President for the CCT program, to provide reimbursable cost-sharing in the demonstration of advanced clean coal technologies, is only one element of the Innovative Clean Coal Technology Program resulting from the Report of the Joint Envoys on Acid Rain. If the demonstrated technologies are found to be economically, technically and environmentally sound, normal market forces will result in their eventual commercial use. However, utilities are risk-averse as a result of current regulatory requirements that severely limit their return on investment, regardless of the degree of risk involved or benefits derived from such risk-taking. At the same time, these regulations severely penalize failures associated with risky investments. As a result, without the proper incentives, risky ventures, such as building the first few commercial plants based

Clean Coal Technology Program

STATE REGULATORY PROVISION

Question 4: Objections have been lodged against the Department's decision to give preference to projects located in states for which the rate-making bodies of those states treat the innovative clean coal technologies the same as pollution control projects or technologies. How does the Department respond to that criticism?

Answer: The provision originated from the President's Task Force on Regulatory Relief. It was meant to be a "carrot" to states to encourage their ratemaking authorities to treat clean coal technologies the same as they do pollution control devices in ratemaking. The Task Force had no wish to intrude on states' rights in this area - consequently it recommended this "carrot" approach, rather than a "stick."

We believe it makes sense to treat clean coal technologies much the same as pollution controls. These technologies reduce emissions while, for many, also offer other benefits like more economical power, more efficient operations, additional capacity, etc.

We recognize the concern this provision has caused; we will apply it only as a "tie-breaker" and only when it doesn't bias technological or geographic diversity. We would also consider treating a state that has a pending action to so recognize innovative clean coal technologies as sufficient to satisfy this provision.

upon demonstrated technologies, even if they are likely to be economically sound, are likely to be slow. Thus, incentives like those recommended by the Vice President's Task Force will better ensure the rapid deployment of CCT's and accelerate emissions reduction.

-- Technologies which are economically competitive and environmentally sound will eventually find their way into the marketplace over time. The regulatory changes proposed will accelerate their widespread deployment.

-- A FERC rulemaking proceeding will be required to implement the deployment incentives. The rulemaking process is beyond the scope of the Program Opportunity Notice and will, in fact, follow a separate path from that of the Program Opportunity Notice. The timing of both activities is such that they will dovetail with each other later this calendar year.

Clean Coal Technology Program

Question 5:	Many advocates of the advancement of clean coal technology believe that the government must assist private industry in the early commercial deployment of these technologies in order to assure their widespread penetration into the marketplace. Does the Department intend to support replications of technologies that have previously been demonstrated, of more than one demonstration of the same technology? What will be the criteria for soliciting projects with these funds, if appropriated?
Answer:	The goal of the CCT and Innovative Clean Coal Technology programs is to have a diversity of technologies demonstrated at a scale large enough to have all of the technical, performance, environmental and economic data necessary for commercial decisions by the 1990's. Such a diversity of technologies will be required to satisfy the requirements of the wide range and number of sitespecific technologies that characterize the potential end-users (e.g., coal types, boiler types, regulatory requirements, site limitations, etc.).

The Department can better achieve its goal of having a diversity of technologies available by using similar technologies in multiple but different applications rather than by replicating plants. It is believed that the widespread penetration of these technologies can be achieved by demonstrating performance of the technologies operating under different conditions (e.g., location, coal type, system configuration). The data required will be available (similar to that generated through replicating plants) and it is expected that normal market forces will be supplemented by the aggressive marketing activities of the industrial participants. Incentives like those proposed by the Vice President's Task Force on Regulatory Relief should accelerate the commercial deployment of these.

The criteria used in soliciting new projects will be established at the time of the future solicitations and will be based upon lessons learned from the ICCT program, Congressional guidance, and input from the ICTAP and the public.

Clean Coal Technology Program

Question 7: Will financial incentives proposed by the President be enough to assure the widespread commercial incorporation of clean coal technologies? If not, what else will be necessary to assure market penetration?

Answer: The technologies to be demonstrated under the CCT program are expected to be economically competitive and environmentally sound, and thus should gain acceptance, on these grounds, in the marketplace. Over time, however, the regulatory changes proposed should accelerate their widespread deployment. Thus, incentives like those recommended by the Vice President's Task Force should help to ensure the rapid deployment of CCT's.

We will continue to review the incentives to ensure that they are adequately balanced against the market forces, and appropriate actions to delete, add to, or modify the incentives will be taken, based upon the results of our review.

Clean Coal Technology Program

Question 8:	DOE is requesting an advance appropriation for further clean coal solicitations of $1.775 billion for 1990, 1991, and 1992. Why do you believe this amount of money to be necessary and how does the Department intend to use those funds? How many solicitations for clean coal demonstration projects are envisioned? Has Canada initiated a comparable clean coal technology program?
Answer:	The two principal reasons for requesting advanced appropriations are:

(1) It is important for the U.S. to demonstrate its commitment to the full implementation of the Special Envoys' recommendations. This is necessary both in our international activities and in assuring domestic firms that the Government is prepared to stand behind its commitment to the cost-shared effort.

(2) It is also important from an R&D perspective. Several promising clean coal concepts are now in the R&D pipeline -- not yet sufficiently mature to compete for demonstration funds, but certainly nearing that point within the next two to three years. Confidence that both the federal commitment and the necessary cost-sharing funds will be available when these concepts mature will

give developers the incentive to continue their R&D efforts -- most likely with a greater proportion of their own funds.

The advanced appropriations requested in the FY 1989 budget for future years would be used for other solicitations similar to those used for the first Clean Coal Technology activity. While the goals and objectives of specific solicitations may vary to be responsive to Congressional guidance and the national need, they will provide the essential opportunity to demonstrate promising new coal utilization and cleanup technologies for the commercial marketplace. With the adoption of these new technologies, more of the Nation's coal resource base can be used while at the same time continuing the downward trend in emissions generated.

We do not have any evidence that would indicate that Canada has initiated a clean coal technology program that could be considered comparable to that of the U.S.

Fuel Cells

Question 1: In testimony before the Energy R&D subcommittee last September, Assistant Secretary Fitzpatrick testified on DOE's work on Proton Exchange Membrane (PEM) fuel cells for mobile and remote applications. In addition, she called the Direct Methanol Fuel Cell "a fuel cell researcher's dream." Given the drastic cuts in the FY 1989 budget for fuel cells, what is the fate of the PEM and the Direct Methanol Fuel cell under DOE's proposed budget?

Answer 1: The Proton Exchange Membrane fuel cell project will be maintained in the FY 1989 budget to continue research on the membrane material improvements and to improve the electrode catalyst. This activity is anticipated to have private sector funding support to supplement this budget request. The activity to directly use methanol in a fuel cell is progressing in parallel together with improvements in the catalyst and membrane materials.

Fuel Cells

Question 2: In her testimony, Assistant Secretary Fitzpatrick stated: "Where Government can provide the most effective contribution to fuel cell technology is in building a solid base of technological information which industry can use to make market-oriented, developmental decisions." Given the importance of renewable energy/hybrid systems, especially in developing an overseas market for fuel cell technology, will the Department's FY 1989 level of effort in the fuel cells program provide such a solid base?

Answer 2: Building the technology base for the PEM fuel cell has been a high priority for the Department. There has been increased interest by the private sector in participating in the electrolyte membrane development and now there is interest in taking this technology beyond the laboratory stage and into the applied research and engineering stage. These arrangements are being pursued vigorously by the Department of Energy, the national laboratories, and private industry.

Fuel Cells

Question 3: Last summer, the Fuel Cells Association proposed a series of recommendations to strengthen the DOE's fuel cell R&D partnership with industry. One of these recommendations pertained to the potential benefits of integrating fuel cells with renewable energy technologies, especially for developing countries. Given the recent aggressiveness of Japan, and Italy in fuel cells, a technology pioneered in the U.S., is the Department confident that its FY 1989 fuel cell program won't be seen as "too little, too late" in the development of an overseas market? Indeed, as with wind technology, can the Department be sure that we won't be importing fuel cells for the domestic market in the near future from countries with a stronger Government-industry partnership?

Answer 3: The United States currently leads the world in fuel cell technology. Integrating fuel cells with renewable technologies could expand the markets for renewables. While it is difficult to predict the future, it is envisioned that several products could well be on the U.S. market and possibly on overseas markets, in five to ten years. It is possible that U.S. manufacturers will have a strong market share but also possible that European or Japanese manufacturers could have a significant part of the market. The rapid rate of progress being achieved by other countries is probably due in part to spin-off from the U.S. fuel cell technology effort in addition to the commitment of Government and industry in the respective countries. The Department does not believe that the Government should be involved with commercializing products as is done in some overseas nations, and that in the long-run, allowing U. S. industry to take the lead in product development will lead to more competitive products.

Geoscience Research Program

Question 1:	Last February, the Energy Research Advisory Board issued its report, "Geoscience Research for Energy Security." Would you please provide for the record what progress has been made so far in implementing the recommendations of the ERAB report, including setting up an Office of Geoscience Research?
Answer:	DOE has responded to the ERAB recommendations by establishing an Office of Geoscience Research (OGR) and a Hydrocarbon Geoscience Research Coordinating Committee (HGRCC). The OGR will improve the focus of geoscience research within the Office of Fossil Energy (FE), while the HGRCC will enhance coordination of hydrocarbon geoscience research activities both within DOE and with other agencies. FE is enhancing its hydrocarbon geoscience research programs while all non-FE research continues to be pursued within the cognizant program offices. The OGR and the HGRCC assure coordination among these offices. Along with the creation of the OGR and the HGRCC, DOE has taken other steps toward the development of an integrated geoscience strategy and program. The Secretary of Energy has asked the National Petroleum Council (NPC) to assess the feasibility of a Petroleum Research Institute to undertake industry-sponsored research related to petroleum recovery. As part of this study, the NPC is surveying the oil industry to determine what research gaps exist in this area and where there might be a government research role. The study

committee's report is expected in late spring. In addition, the Assistant Secretary for Fossil Energy has signed a statement of intent to support a consortium of state geological surveys and university departments active in oil and gas recovery research, organized by the University of Texas at Austin, to assist FE in developing comprehensive geoscience and enhanced oil recovery R&D programs. These activities will be major contributors to the integrated strategic plan for geoscience research to be developed by the HGRCC.

Geoscience Research Program

Question 2: Given your stated commitment to a significant expansion of this program and the numerous statements by Assistant Secretary Wampler to the same effect, why is the petroleum portion of the Fossil Energy Research Program so small? If ERAB's recommendations, particularly adding $50 million for geosciences to the $25.9 million FY87 budget for oil, gas, and shale, have been given any credence at all, shouldn't we be looking for a FY89 budget of at least $70 million or so in oil gas shale and related geosciences?

Answer: The Department's request for FY 1989 represents the Administration's awareness of the importance of a healthy oil and gas industry to the overall economic well-being of the Nation and the appropriate role for the Federal Government in this area. Adequate, secure and reasonable prices for supplies of high quality liquid transportation fuels are recognized as one of the highest priority energy issues facing us today. The request reflects our full recognition of the importance of economically produced, domestic liquid transportation fuels. In this regard, and consistent with the recommendations in the Energy Research Advisory Board's (ERAB) report on geoscience, top priority is given to an integrated program of geoscience and reservoir engineering for improved recovery of oil and gas. This effort is designed to improve our knowledge of the vast quantities of oil remaining after conventional extraction has been exhausted. It is only through such an integrated effort that we can expect industry to produce more of the oil that is found. Thus, our major priority is for enhanced oil recovery (EOR), including geoscience, with our request slightly above the level appropriated in FY 1988 and almost double our FY 1988 request. We are currently in the process of developing an overall plan for EOR. Once formed, we intend to submit our EOR plan to the Geoscience Institute for Oil and Gas Recovery Research for its consideration. Thus, we will benefit from the Institute's review in that it will include input from the private sector, the universities and the U.S. Geological Survey in a concentrated effort. Funds for the other resources in this category (Oil Shale, Tar Sands, Advanced Process Technology and Unconventional Gas Recovery) will support the critical technology base activities while other priority efforts progress. It should be noted, however, that much of the work accomplished in the geoscience work with oil reservoirs will be applicable to gas reservoirs as well. Furthermore, we will be seeking the maximum level of cost sharing possible and, through this approach, expand the level of effort in the entire area. In the area of Unconventional Gas Recovery, we have completed several projects. In FY 1989, our efforts will be concentrated on the review and evaluation of results, conducting of simulations, updating of models and maintaining the data base. This is the reason for the gas budget decrease from \$10.5M to \$1.7M.

Geoscience Research Program

Question 3: In FY88 we were able to fund oil, gas, and shale programs at about $39 million. That included a small amount of "earmarking" within the existing programs for geosciences work. It was hoped that during FY88 the Office of Geosciences could be set up, a director appointed, and a staff assembled. We further anticipated that a formal strategic plan would be developed for oil and gas geoscience programs. Do you expect those things to be sufficiently accomplished by the end of FY88 to begin a substantially expanded program in geosciences in FY89? If not, why?

Answer: The Office of Geoscience Research was established in September of 1987, under the Assistant Secretary for Fossil Energy (ASFE). The staffing of the office has been initiated with the hiring of three people, including the Deputy Director. An intensive effort is currently underway to recruit the Director and other staff. It is anticipated that these positions will be fully staffed by late spring. Initial activities undertaken include the review of Fossil Energy programs and proposals during the Department's FY 1989 budget process and holding the initial meeting of the Hydrocarbon Geoscience Research Coordinating Committee. In addition we are maintaining, and expanding, planned research in oil and gas extraction and will be pursuing outside comment on the draft EOR Initiative that was developed by FE staff.

We are in the process of implementing the $500,000 effort Congress authorized to obtain the outside expertise needed to develop the comprehensive strategic plan. As part of this effort, the ASFE signed a statement of intent to support the Geoscience Institute for Oil and Gas Recovery Research, a consortium of state geological surveys and universities. Provided that appropriate and acceptable procurement documentation is developed in a reasonable period of time by the Institute, this consortium will provide much of the information needed for an integrated broad-based and focused geoscience research plan by August. The input from all of the above activities, as well as others, will be used to formulate a draft integrated program plan, by the end of FY 1988 if possible.

Geoscience Research Program

Question 4: How do you anticipate funding development of an analytically based strategic plan for the geoscience program?

Answer: $500,000 was provided in the Unconventional Gas Recovery Program in FY 1988 for assistance in the development of a comprehensive geoscience and enhanced oil recovery research and development program plan. In addition, some administrative support will be provided from the Program Direction account.

Geoscience Research Program

Question 5:	If FY88 levels were maintained, or increased slightly for the existing programs in oil, gas, and shale, would a separate geoscience research line item on the order of $20 million be more in line with the ERAB recommendations -at least for a start -- for the FY89 program?
Answer:	We do not believe that a separate line item in the Fossil Energy Research and Development budget for geoscience research is appropriate. The funding for geoscience activities will continue to be requested in the individual technologies, e.g., Enhanced Oil Recovery, Unconventional Gas Recovery and Advanced Process Technology. For example, $500,000 was provided in the Unconventional Gas Recovery Program in FY 1988 for assistance in the development of a comprehensive geoscience and enhanced oil recovery research and development program plan. In addition, some administrative support will be provided from the Program Direction account.

Geoscience is not an end unto itself. Rather, it is an important element that must be addressed in the context of developing oil and gas recovery strategies. For example, geoscience research funded in the Advanced Exploratory Research (AER) subprogram is crosscutting, generic, basic studies of the physical, chemical, geological, biological, and thermodynamic mechanisms pertinent to finding and recovering oil and gas. The EOR geoscience research is more oriented toward the development of knowledge necessary for the application of a specific process to a specific type of reservoir. The AER geoscience research provides the basic data on which the EOR applied geoscience research builds.

Superconductivity -- Secrecy

Question: The Administration recently sent to Congress the "Superconductivity Competitiveness Act of 1988." This bill would amend current law to:

1) permit joint ventures with the private sector in superconductivity research

2) add protection for manufacturing processes in the patent process

3) withhold scientific and technical information under the Freedom of Information Act.

--How would this bill affect DOE laboratories?

Answer: The DOE laboratories, which are operated by private contractors, would not be affected, as this bill applies to Government operated, Government owned laboratories.

Superconductivity -- Secrecy

Question: Won't added restrictions on exchange of information limit the ability of scientists to collaborate with one another and with foreign researchers?

Answer: The restrictions on exchange of information would not limit the ability of scientists to collaborate with one another and with foreign researchers in the area of basic scientific information. However, depending on its implementation, there may be a tightening of the flow of information because of the interpretation of what is of value for commercialization.

Superconductivity -- Secrecy

Question: Do you think that is wise? With the very rapid pace at which this field is developing, collaboration and free exchange of information would be critical.

Answer: We do not think it is wise to restrict the free exhange of information. We do not think this bill will inhibit the free exchange of information in the basic area, but would tend to protect commercially important data and information. Nevertheless, there may be some problems associated with its implementation.

SSC

Question 1:	In the President's budget you can trade off asset sales (like the Naval Petroleum Reserve) or reductions in funding (like the Appalachian Regional Commission) against added money for the SSC. But in reality, it is the Energy and Water Subcommittee of Appropriations that must fund the SSC. Provide a table showing the Administration's request for funding for all the programs covered by the Energy and Water Subcommittee (including the SSC). Show any decrease or increase over last year's appropriation and any decrease or increase over the current services baseline for each line item and in total for civilian and defense programs.
Answer 1:	In the following table, the first series of columns represents the FY 1989 Administration's request for funding for all programs covered by the Energy and Water Subcommittee, the FY 1988 Appropriation in the FY 1989 structure, and the increase or decrease from FY 1988. The second series of columns represents the FY 1989 Administration's request for funding for all programs covered by the Energy and Water Subcommittee, the FY 1989 Current Services baseline and the increase or decrease from the FY 1989 Current Services baseline.

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
SUMMARY BY APPROPRIATION:						
ENERGY SUPPLY R&D	1,969,760	1,860,087	109,673	1,969,760	2,028,124	-58,364
URANIUM SUPPLY AND ENRICHMENT ACTIVITIES	1,184,000	950,000	234,000	1,184,000	969,000	215,000
GENERAL SCIENCE AND RESEARCH ACTIVITIES	364,986	355,108	9,878	364,986	820,546	-455,560
TOTAL, ISOTOPE PRODUCTION & DIST FUND	16,243	89	16,154	16,243	-----	16,243
BASIC RESEARCH USER FACILITIES	972,613	574,945	397,668	972,613	-----	972,613
ATOMIC ENERGY DEFENSE ACTIVITIES	8,100,000	7,749,364	350,636	8,100,000	8,100,000	-----
DEPARTMENTAL ADMINISTRATION	177,814	164,243	13,571	177,814	179,159	-1,345
POWER MARKETING ADMINISTRATIONS:						
ALASKA POWER ADMINISTRATION	3,159	3,026	133	3,159	3,159	-----
BONNEVILLE POWER ADMINISTRATION	136,000	165,000	-29,000	136,000	136,000	-----
SOUTHEASTERN POWER O&M	36,267	27,400	8,867	36,267	36,267	-----
SOUTHEASTERN CONT. FUND	-----	-----	-----	-----	-----	-----
SOUTHWESTERN POWER O&M	15,389	16,648	-1,259	15,389	15,389	-----
SOUTHWESTERN POWER CONT. FUND	-----	-----	-----	-----	-----	-----
WESTERN AREA POWER O&M	298,413	249,515	48,898	298,413	254,505	43,908
WAPA EMERGENCY FUND	-----	24	-24	-----	-----	-----
COLORADO RIVER BASIN	-----	-----	-----	-----	-----	-----
TOTAL, POWER MARKETING ADMINISTRATIONS	489,228	461,613	27,615	489,228	445,320	43,908
FERC SALARIES AND EXPENSES	106,760	100,000	6,760	106,760	102,000	4,760
NUCLEAR WASTE DISPOSAL FUND	448,832	360,000	88,832	448,832	367,897	80,935
GEOTHERMAL RESOURCES DEVELOPMENT FUND	75	72	3	75	76	-1
SPECIAL FOREIGN CURRENCY	-----	-----	-----	-----	-----	-----
ALCOHOL FUELS	-----	-----	-----	-----	-----	-----
ALTERNATIVE FUELS PRODUCTION	-----	-----	-----	-----	-----	-----
SUBTOTAL DOE	13,830,311	12,575,521	1,254,790	13,830,311	13,012,122	818,189

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DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

PAGE 1

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
ENERGY SUPPLY R&D						
SOLAR ENERGY						
SOLAR BUILDINGS ENERGY SYSTEMS						
OPERATING EXPENSES	5,365	5,250	115	5,365	5,355	10
PLANT AND CAPITAL EQUIPMENT	-----	150	-150	-----	153	-153
TOTAL, SOLAR BUILDING ENERGY SYSTEMS	5,365	5,400	-35	5,365	5,508	-143
PHOTOVOLTAIC ENERGY SYSTEMS						
OPERATING EXPENSES	23,380	34,700	-11,320	23,380	35,394	-12,014
PLANT AND CAPITAL EQUIPMENT	800	300	500	800	306	494
TOTAL, PHOTOVOLTAIC ENERGY SYSTEMS	24,180	35,000	-10,820	24,180	35,700	-11,520
SOLAR THERMAL ENERGY SYSTEMS						
OPERATING EXPENSES	14,700	16,950	-2,250	14,700	17,289	-2,589
PLANT AND CAPITAL EQUIPMENT	300	88	212	300	90	210
TOTAL, SOLAR THERMAL ENERGY SYSTEMS	15,000	17,038	-2,038	15,000	17,379	-2,379
BIOFUELS ENERGY SYSTEMS						
OPERATING EXPENSES	10,480	17,055	-6,575	10,480	17,396	-6,916
PLANT AND CAPITAL EQUIPMENT	555	-----	555	555	-----	555
TOTAL, BIOFUELS ENERGY SYSTEMS	11,035	17,055	-6,020	11,035	17,396	-6,361
WIND ENERGY SYSTEMS						
OPERATING EXPENSES	8,339	8,140	199	8,339	8,303	36
PLANT AND CAPITAL EQUIPMENT	500	400	100	500	408	92
TOTAL, WIND ENERGY SYSTEMS	8,839	8,540	299	8,839	8,711	128
OCEAN ENERGY SYSTEMS						
OPERATING EXPENSES	3,105	4,000	-895	3,105	4,080	-975
PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----	-----	-----
TOTAL, OCEAN ENERGY SYSTEMS	3,105	4,000	-895	3,105	4,080	-975
INTERNATIONAL SOLAR ENERGY PROGRAM						
OPERATING EXPENSES	541	750	-209	541	765	-224
PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----	-----	-----
TOTAL, INTERNATIONAL SOLAR ENERGY PROGRAM	541	750	-209	541	765	-224

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DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

PAGE 2

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
SOLAR TECHNOLOGY TRANSFER						
OPERATING EXPENSES	1,780	2,590	-810	1,780	2,642	-862
PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----	-----	-----
TOTAL, SOLAR TECHNOLOGY TRANSFER	1,780	2,590	-810	1,780	2,642	-862
SOLAR ENERGY RESEARCH INSTITUTE						
OPERATING EXPENSES	-----	-----	-----	-----	-----	-----
PLANT AND CAPITAL EQUIPMENT	4,642	620	4,022	4,642	632	4,010
TOTAL, SOLAR ENERGY RESEARCH INSTITUTE	4,642	620	4,022	4,642	632	4,010
PROGRAM SUPPORT	970	937	33	970	956	14
RESOURCE ASSESSMENT						
OPERATING EXPENSES	709	700	9	709	714	-5
PLANT AND CAPITAL EQUIPMENT	45	28	17	45	29	16
TOTAL, RESOURCE ASSESSMENT	754	728	26	754	743	11
PROGRAM DIRECTION - OTHER SOLAR ENERGY	4,164	4,194	-30	4,164	4,417	-253
SUBTOTAL, SOLAR ENERGY	80,375	96,852	-16,477	80,375	98,929	-18,554
COOPERATIVE VENTURE R&D POOLS	-----	-----	-----	-----	-----	-----
GEOTHERMAL						
OPERATING EXPENSES	15,661	20,935	-5,274	15,661	21,385	-5,724
PLANT AND CAPITAL EQUIPMENT	795	-----	795	795	-----	795
TOTAL, GEOTHERMAL	16,456	20,935	-4,479	16,456	21,385	-4,929
HYDROPOWER						
OPERATING EXPENSES	-----	-----	-----	-----	-----	-----
PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----	-----	-----
TOTAL, HYDROPOWER	-----	-----	-----	-----	-----	-----
ELECTRIC ENERGY SYSTEMS						
OPERATING EXPENSES	17,766	15,270	2,496	17,766	15,588	2,178
PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----	-----	-----
TOTAL, ELECTRIC ENERGY SYSTEMS	17,766	15,270	2,496	17,766	15,588	2,178
ENERGY STORAGE SYSTEMS						
OPERATING EXPENSES	8,466	14,474	-6,008	8,466	14,779	-6,313
PLANT AND CAPITAL EQUIPMENT	27	26	1	27	27	-----
TOTAL, ENERGY STORAGE SYSTEMS	8,493	14,500	-6,007	8,493	14,806	-6,313

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
LIGHT WATER REACTOR						
OPERATING EXPENSES	26,800	32,000	-5,200	26,800	32,640	-5,840
PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----	-----	-----
TOTAL, LIGHT WATER REACTOR	26,800	32,000	-5,200	26,800	32,640	-5,840
ADVANCED REACTOR R&D						
OPERATING EXPENSES	60,200	89,070	-28,870	60,200	94,421	-34,221
PLANT AND CAPITAL EQUIPMENT	1,000	3,500	-2,500	1,000	-----	1,000
TOTAL, ADVANCED REACTOR R&D	61,200	92,570	-31,370	61,200	94,421	-33,221
FACILITIES						
OPERATING EXPENSES	96,900	105,900	-9,000	96,900	120,054	-23,154
PLANT AND CAPITAL EQUIPMENT	13,800	11,800	2,000	13,800	-----	13,800
TOTAL, FACILITIES	110,700	117,700	-7,000	110,700	120,054	-9,354
WATER COOLED BREEDER						
OPERATING EXPENSES	-----	-----	-----	-----	-----	-----
PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----	-----	-----
TOTAL, WATER COOLED BREEDER	-----	-----	-----	-----	-----	-----
PROGRAM DIRECTION						
OPERATING EXPENSES	8,470	8,500	-30	8,470	8,993	-523
PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----	-----	-----
TOTAL, PROGRAM DIRECTION	8,470	8,500	-30	8,470	8,993	-523
ADVANCED NUCLEAR SYSTEMS						
OPERATING EXPENSES	24,700	19,800	4,900	24,700	21,420	3,280
PLANT AND CAPITAL EQUIPMENT	3,000	1,200	1,800	3,000	-----	3,000
TOTAL, ADVANCED NUCLEAR SYSTEMS	27,700	21,000	6,700	27,700	21,420	6,280
SPACE/DEFENSE POWER SYSTEMS						
OPERATING EXPENSES	75,490	63,460	12,030	75,490	76,755	-1,265
PLANT AND CAPITAL EQUIPMENT	41,510	11,790	29,720	41,510	-----	41,510
TOTAL SPACE/DEFENSE POWER SYSTEMS	117,000	75,250	41,750	117,000	76,755	40,245
SUBTOTAL, NUCLEAR R&D ACTIVITIES	351,870	347,020	4,850	351,870	354,283	-2,413

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
CIVILIAN WASTE R & D						
OPERATING EXPENSES	2,498	5,000	-2,502	2,498	5,100	-2,602
PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----	-----	-----
TOTAL, CIVILIAN WASTE R & D	2,498	5,000	-2,502	2,498	5,100	-2,602
REMEDIAL ACTION AND WASTE TECHNOLOGY						
OPERATING EXPENSES	257,200	246,000	11,200	257,200	256,785	415
PLANT AND CAPITAL EQUIPMENT	3,100	750	2,350	3,100	-----	3,100
TOTAL, REMEDIAL ACTION AND WASTE TECHNOLOGY	260,300	246,750	13,550	260,300	256,785	3,515
ENVIRONMENT, SAFETY, AND HEALTH						
OPERATING EXPENSES	106,900	65,900	41,000	106,900	69,360	37,540
PLANT AND CAPITAL EQUIPMENT	3,100	2,100	1,000	3,100	-----	3,100
TOTAL ENVIRONMENT, SAFETY AND HEALTH	110,000	68,000	42,000	110,000	69,360	40,640
BIOLOGICAL AND ENVIRONMENTAL RESEARCH						
OPERATING EXPENSES	236,500	204,585	31,915	236,500	270,504	-34,004
PLANT AND CAPITAL EQUIPMENT	12,500	64,700	-52,200	12,500	-----	12,500
TOTAL, BIOLOGICAL AND ENVIRONMENTAL RESEARCH	249,000	269,285	-20,285	249,000	270,504	-21,504
LIQUIFIED GASEOUS SPILL TEST FACILITY						
OPERATING EXPENSES	766	1,000	-234	766	1,057	-291
PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----	-----	-----
TOTAL, LIQUIFIED GASEOUS SPILL TEST FACILITY	766	1,000	-234	766	1,057	-291
MAGNETIC FUSION						
OPERATING EXPENSES	317,465	298,430	19,035	317,465	341,700	-24,235
PLANT AND CAPITAL EQUIPMENT	42,535	36,570	5,965	42,535	-----	42,535
TOTAL, MAGNETIC FUSION	360,000	335,000	25,000	360,000	341,700	18,300
BASIC ENERGY SCIENCES						
OPERATING EXPENSES	344,452	327,059	17,393	344,452	575,867	-231,415
PLANT AND CAPITAL EQUIPMENT	31,210	110,161	-78,951	31,210	-----	31,210
TOTAL, BASIC ENERGY SCIENCES	375,662	437,220	-61,558	375,662	575,867	-200,205

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
ENERGY RESEARCH OVERSIGHT, ANALY. & UNIV. SUPPORT						
ENERGY RESEARCH ANALYSIS						
OPERATING EXPENSES	3,800	3,700	100	3,800	3,744	56
PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----	-----	-----
TOTAL, ENERGY RESEARCH ANALYSIS	3,800	3,700	100	3,800	3,744	56
UNIVERSITY RESEARCH INSTRUMENTATION	5,000	5,000	-----	5,000	5,100	-100
UNIVERSITY RESEARCH SUPPORT						
OPERATING EXPENSES	15,770	18,400	-2,630	15,770	18,768	-2,998
PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----	-----	-----
TOTAL, UNIVERSITY RESEARCH SUPPORT	15,770	18,400	-2,630	15,770	18,768	-2,998
ADVISORY & OVERSIGHT PROG. DIRECTION	3,339	3,200	139	3,339	3,264	75
SUBTOTAL, ENERGY RESEARCH OS., ANAL., & UNIV. SUP	27,909	30,300	-2,391	27,909	30,876	-2,967
MULTI-PROGRAM LABORATORIES FACILITIES SUPPORT						
OPERATING EXPENSE	8,770	12,900	-4,130	8,770	54,672	-45,902
PLANT AND CAPITAL EQUIPMENT	57,105	40,700	16,405	57,105	-----	57,105
TOTAL, MULTI-PROGRAM LABORATIES FACILITIES SUPPORT	65,875	53,600	12,275	65,875	54,672	11,203
SMALL BUSINESS INNOVATION RESEARCH PROGRAM	-----	-----	-----	-----	-----	-----
ISOTOPE PRODUCTION	-----	-----	-----	-----	-----	-----
ISOTOPE SALES	-----	-----	-----	-----	-----	-----
IN-HOUSE ENERGY MANAGEMENT						
OPERATING EXPENSES	2,000	1,900	100	2,000	1,972	28
PLANT AND CAPITAL EQUIP	17,520	16,980	540	17,520	17,625	-105
TOTAL, IN-HOUSE ENERGY MANAGEMENT	19,520	18,880	640	19,520	19,597	-77
STRATEGIC FACILITIES UTILIZATION PROGRAM						
OPERATING EXPENSES	1,977	1,775	202	1,977	2,258	-281
PLANT AND CAPITAL EQUIPMENT	198	400	-202	198	-----	198
TOTAL, STRATEGIC FACILITIES UTILIZATION PROGRAM	2,175	2,175	-----	2,175	2,258	-83
TECHNICAL INFORMATION & MANAGEMENT PROGRAM						
OPERATING EXPENSES	13,100	13,100	-----	13,100	13,598	-498
PLANT AND CAPITAL EQUIPMENT	3,400	900	2,500	3,400	934	2,466
SUPPORT FROM OTHER PROGRAMS	-----	-----	-----	-----	-----	-----
TOTAL, TECHNICAL INFORMATION & MANAGEMENT PROGRAM	16,500	14,000	2,500	16,500	14,532	1,968

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
POLICY AND MANAGEMENT - ER (ESRD)	667	650	17	667	688	-21
POLICY AND MANAGEMENT - NE (ESRD)	2,165	2,200	-35	2,165	2,477	-312
POLICY AND MANAGEMENT - CE(ESRD)	1,763	1,450	313	1,763	1,464	299
TOTAL, ENERGY SUPPLY R & D	1,969,760	1,980,087	-10,327	1,969,760	2,151,928	-182,168
SBIR FROM UNOBLIG-(CLEAN COAL TECH)ESRD	-----	-----	-----	-----	-----	-----
SAVINGS FROM MANAGEMENT INITIATIVES - (ER)ESRD	-----	-----	-----	-----	-----	-----
COOPERATIVE VENTURES - BACKOUT - CE(ESRD)	-----	-----	-----	-----	-----	-----
USE OF UNOBLIG. BALANCES - UE	-----	-104,000	104,000	-----	-123,804	123,804
GENERAL REDUCTION - ESRD	-----	-----	-----	-----	-----	-----
REVISED ECONOMIC ASSUMPTIONS-MA(ESRD)	-----	-----	-----	-----	-----	-----
LESS PROPOSED TRANSFER OF UNOBLIGATED BALANCES(ESGH)	-----	-----	-----	-----	-----	-----
USE OF PRIOR YEAR BALANCES - (NE)ESRD	-----	-16,000	16,000	-----	-----	-----
TARGET SHORT FALL	-----	-----	-----	-----	-----	-----
REQUIREMENTS FOR FERS-(MA) ESRD	-----	-----	-----	-----	-----	-----
TOTAL, ENERGY SUPPLY R & D	1,969,760	1,860,087	109,673	1,969,760	2,028,124	-58,364
(OPERATING EXPENSES)	1,732,118	1,556,924	175,194	1,732,118	2,007,920	-275,802
(PLANT AND CAPITAL EQUIPMENT)	237,642	303,163	-65,521	237,642	20,204	217,438

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DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

ACCOUNT TITLE	FY-1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
URANIUM ENRICHMENT						
URANIUM ENRICHMENT ACTIVITIES						
OPERATING EXPENSES	1,098,200	921,000	177,200	1,098,200	969,000	129,200
PLANT AND CAPITAL EQUIPMENT	80,700	34,000	46,700	80,700	-----	80,700
REPAYMENT TO TREASURY	-----	-----	-----	-----	-----	-----
REPAYMENT TO TREASURY (NON-ADD)	-----	-----	-----	-----	-----	-----
SUBTOTAL, URANIUM ENRICHMENT ACTIVITIES	1,178,900	955,000	223,900	1,178,900	969,000	209,900
URANIUM PROGRAM DIRECTION	5,100	5,000	100	5,100	-----	5,100
TOTAL, URANIUM ENRICHMENT ACTIVITIES	1,184,000	960,000	224,000	1,184,000	969,000	215,000
REVENUES						
OPERATING EXPENSES	-----	-----	-----	-----	-----	-----
PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----	-----	-----
TOTAL, REVENUES	-----	-----	-----	-----	-----	-----
USE OF PRIOR BALANCE-(RE)UE	-----	-10,000	10,000	-----	-----	-----
RESCISSIONS, DEFERRALS, SUPP	-----	-----	-----	-----	-----	-----
TOTAL, URANIUM ENRICHMENT	1,184,000	950,000	234,000	1,184,000	969,000	215,000
(OPERATING EXPENSES)	1,103,300	916,000	187,300	1,103,300	969,000	134,300
(PLANT AND CAPITAL EQUIPMENT)	80,700	34,000	46,700	80,700	-----	80,700

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DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
GENERAL SCIENCE AND RESEARCH ACTIVITIES						
HIGH ENERGY PHYSICS						
OPERATING EXPENSES	144,906	136,998	7,908	144,906	820,546	-675,640
PLANT AND CAPITAL EQUIPMENT	75,482	80,400	-4,918	75,482	-----	75,482
TOTAL, HIGH ENERGY PHYSICS	220,388	217,398	2,990	220,388	820,546	-600,158
NUCLEAR PHYSICS						
OPERATING EXPENSES	118,138	113,135	5,003	118,138	-----	118,138
PLANT AND CAPITAL EQUIPMENT	23,250	21,775	1,475	23,250	-----	23,250
TOTAL, NUCLEAR PHYSICS	141,388	134,910	6,478	141,388	-----	141,388
GENERAL SCIENCE PROGRAM DIRECTION (GS)	3,210	2,800	410	3,210	-----	3,210
TOTAL, GENERAL SCIENCE	364,986	355,108	9,878	364,986	820,546	-455,560
GENERAL REDUCTION - (ER)GS	-----	-----	-----	-----	-----	-----
LESS PROPOSED TRANS OF UNOBLIG BALANCES	-----	-----	-----	-----	-----	-----
TOTAL, GENERAL SCIENCE AND RESEARCH ACTIVITIES	364,986	355,108	9,878	364,986	820,546	-455,560
(OPERATING EXPENSES)	266,254	252,933	13,321	266,254	820,546	-554,292
(PLANT AND CAPITAL EQUIPMENT)	98,732	102,175	-3,443	98,732	-----	98,732

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
ISOTOPE PRODUCTION AND DISTRIBUTION FUND						
ISOTOPE PRODUCTION....................................	16,243	17,551	-1,308	16,243	-----	16,243
ISOTOPE SALES..	-----	-17,462	17,462	-----	-----	-----
SUBTOTAL, ISOTOPE PRODUCTION & DIST FUND..............	16,243	89	16,154	16,243	-----	16,243

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DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

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ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
BASIC RESEARCH USER FACILITIES						
BASIC ENERGY SCIENCES						
OPERATING EXPENSES	86,293	87,085	-792	86,293	-----	86,293
PLANT AND CAPITAL EQUIPMENT	54,190	38,470	15,720	54,190	-----	54,190
TOTAL, BASIC ENERGY SCIENCES	140,483	125,555	14,928	140,483	-----	140,483
NUCLEAR PHYSICS						
OPERATING EXPENSES	74,962	72,790	2,172	74,962	-----	74,962
PLANT AND CAPITAL EQUIPMENT	47,750	37,400	10,350	47,750	-----	47,750
TOTAL, NUCLEAR PHYSICS	122,712	110,190	12,522	122,712	-----	122,712
HIGH ENERGY PHYSICS						
OPERATING EXPENSES	301,700	276,700	25,000	301,700	-----	301,700
PLANT AND CAPITAL EQUIPMENT	44,718	37,500	7,218	44,718	-----	44,718
TOTAL, HIGH ENERGY PHYSICS	346,418	314,200	32,218	346,418	-----	346,418
SUPERCONDUCTING SUPER COLLIDER						
OPERATING EXPENSES	64,000	25,000	39,000	64,000	-----	64,000
PLANT AND CAPITAL EQUIPMENT	299,000	-----	299,000	299,000	-----	299,000
TOTAL, SUPERCONDUCTING SUPER COLLIDER	363,000	25,000	338,000	363,000	-----	363,000
TOTAL, USER FACILITIES	972,613	574,945	397,668	972,613	-----	972,613
(OPERATING EXPENSES)	526,955	461,575	65,380	526,955	-----	526,955
(PLANT AND CAPITAL EQUIPMENT)	445,658	113,370	332,288	445,658	-----	445,658

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DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
ATOMIC ENERGY DEFENSE ACTIVITIES						
RESEARCH, DEVELOPMENT AND TESTING						
OPERATING EXPENSES	1,576,784	1,556,569	20,215	1,576,784	8,100,000	-6,523,216
PLANT AND CAPITAL EQUIPMENT	337,529	348,290	-10,761	337,529	-----	337,529
TOTAL, RESEARCH AND DEVELOPMENT AND TESTING	1,914,313	1,904,859	9,454	1,914,313	8,100,000	-6,185,687
NUCLEAR DIRECTED ENERGY WEAPONS						
OPERATING EXPENSES	-----	-----	-----	-----	-----	-----
PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----	-----	-----
TOTAL, NUCLEAR DIRECTED ENERGY WEAPONS	-----	-----	-----	-----	-----	-----
INERTIAL CONFINEMENT FUSION						
OPERATING EXPENSES	-----	-----	-----	-----	-----	-----
PLANT AND CAPITAL EQUIPMENT	-----	-----	-----	-----	-----	-----
TOTAL, INERTIAL CONFINEMENT FUSION	-----	-----	-----	-----	-----	-----
PRODUCTION AND SURVEILLANCE						
OPERATING EXPENSES	1,909,445	1,853,690	55,755	1,909,445	-----	1,909,445
PLANT AND CAPITAL EQUIPMENT	351,783	374,030	-22,247	351,783	-----	351,783
TOTAL, PRODUCTION AND SURVEILLANCE	2,261,228	2,227,720	33,508	2,261,228	-----	2,261,228
PROGRAM DIRECTION - DEFENSE PROGRAMS	81,400	74,826	6,574	81,400	-----	81,400
MATERIALS PRODUCTION						
OPERATING EXPENSES	1,572,772	1,424,521	148,251	1,572,772	-----	1,572,772
PLANT AND CAPITAL EQUIPMENT	443,987	384,166	59,821	443,987	-----	443,987
TOTAL, MATERIALS PRODUCTION	2,016,759	1,808,687	208,072	2,016,759	-----	2,016,759
DEFENSE WASTE & ENVIRONMENTAL RESTORATION						
OPERATING EXPENSES	732,624	578,519	154,105	732,624	-----	732,624
PLANT AND CAPITAL EQUIPMENT	246,876	316,813	-69,937	246,876	-----	246,876
USE OF PRIOR YEAR AND BALANCES	-43,000	-----	-43,000	-43,000	-----	-43,000
TOTAL, DEFENSE WASTE & ENVIRONMENTAL RESTORATION	936,500	895,332	41,168	936,500	-----	936,500
VERIFICATION AND CONTROL TECHNOLOGY						
OPERATING EXPENSES	131,200	115,900	15,300	131,200	-----	131,200
PLANT AND CAPITAL EQUIPMENT	8,400	5,100	3,300	8,400	-----	8,400
TOTAL, VERIFICATION AND CONTROL TECHNOLOGY	139,600	121,000	18,600	139,600	-----	139,600

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
NUCLEAR SAFEGUARDS & SECURITY						
OPERATING EXPENSES	75,400	73,340	2,060	75,400	-----	75,400
PLANT AND CAPITAL EQUIPMENT	4,800	4,600	200	4,800	-----	4,800
TOTAL, NUCLEAR SAFEGUARDS & SECURITY	80,200	77,940	2,260	80,200	-----	80,200
SECURITY INVESTIGATIONS						
OPERATING EXPENSES	40,000	32,000	8,000	40,000	-----	40,000
NAVAL REACTORS DEVELOPMENT						
OPERATING EXPENSES	555,400	544,100	11,300	555,400	-----	555,400
PLANT AND CAPITAL EQUIPMENT	74,600	62,900	11,700	74,600	-----	74,600
TOTAL, NAVAL REACTORS DEVELOPMENT	630,000	607,000	23,000	630,000	-----	630,000
TOTAL, ATOMIC ENERGY	8,100,000	7,749,364	350,636	8,100,000	8,100,000	-----
GENERAL REDUCTION	-----	-----	-----	-----	-----	-----
TOTAL, ATOMIC ENERGY DEFENSE ACTIVITIES	8,100,000	7,749,364	350,636	8,100,000	8,100,000	-----
(OPERATING EXPENSES)	6,675,025	6,253,465	421,560	6,675,025	8,100,000	-1,424,975
(PLANT AND CAPITAL EQUIPMENT)	1,467,975	1,495,899	-27,924	1,467,975	-----	1,467,975

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
DEPARTMENTAL ADMINISTRATION						
OFFICE OF THE SECRETARY	2,204	2,191	13	2,204	179,159	-176,955
BOARD OF CONTRACT APPEALS	436	443	-7	436	-----	436
GENERAL COUNSEL	10,874	11,003	-129	10,874	-----	10,874
INSPECTOR GENERAL - OE	20,661	21,245	-584	20,661	-----	20,661
INSPECTOR GENERAL - CE	298	288	10	298	-----	298
TOTAL, INSPECTOR GENERAL	20,959	21,533	-574	20,959	-----	20,959
MANAGEMENT AND ADMINISTRATION						
OPERATING EXPENSES	150,513	155,091	-4,578	150,513	-----	150,513
PLANT AND CAPITAL EQUIPMENT	5,612	4,479	1,133	5,612	-----	5,612
TOTAL MANAGEMENT AND ADMINISTRATION	156,125	159,570	-3,445	156,125	-----	156,125
OPERATIONS OFFICES						
OPERATING EXPENSES	106,283	108,443	-2,160	106,283	-----	106,283
PLANT AND CAPITAL EQUIPMENT	1,252	1,210	42	1,252	-----	1,252
TOTAL, OPERATIONS OFFICES	107,535	109,653	-2,118	107,535	-----	107,535
MINORITY ECONOMIC IMPACT	3,088	3,860	-772	3,088	-----	3,088
POLICY ANALYSIS AND SYSTEM STUDIES	6,840	6,084	756	6,840	-----	6,840
CONGRESSIONAL, INTERGOV. & PUBLIC AFFAIRS						
PROGRAM DIRECTION	4,655	5,231	-576	4,655	-----	4,655
INDIAN AFFAIRS	-----	200	-200	-----	-----	-----
CONSUMER AFFAIRS	67	65	2	67	-----	67
PUBLIC AFFAIRS	260	251	9	260	-----	260
COMPETITION	50	50	-----	50	-----	50
SUBTOTAL, CONGRESS., INTERGOV. & PUBLIC AFFAIRS	5,032	5,797	-765	5,032	-----	5,032
INTERNATIONAL AFFAIRS	5,545	5,571	-26	5,545	-----	5,545
SUBTOTAL, ADMINISTRATIVE OPERATIONS	318,638	325,705	-7,067	318,638	179,159	139,479

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DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

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ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
COST OF WORK FOR OTHERS	115,562	95,734	19,828	115,562	-----	115,562
GENERAL REDUCTION	-----	-----	-----	-----	-----	-----
REVENUES ASSOCIATED WITH COST OF WORK	-137,008	-112,988	-24,020	-137,008	-----	-137,008
OTHER REVENUES	-87,265	-103,446	16,181	-87,265	-----	-87,265
SUBTOTAL, REVENUES	-224,273	-216,434	-7,839	-224,273	-----	-224,273
TOTAL, DEPARTMENTAL ADMINISTRATION	209,927	205,005	4,922	209,927	179,159	30,768
USE OF PRIOR YEAR BALANCES - (MA)DA	-----	-----	-----	-----	-----	-----
TRANSF IN FOR PUB AFF & FOREIGN TRAVEL RED	-----	-----	-----	-----	-----	-----
USE OF PRIOR YEAR BALANCES	-----	-----	-----	-----	-----	-----
USE OF PRIOR YEAR UNOBL BAL - (PA)DA	-----	-----	-----	-----	-----	-----
USE OF PRIOR YEAR UNOBL BAL - (IA)DA	-----	-90	90	-----	-----	-----
USE OF PRIOR YEAR UNOBL BAL - (MA)DA	-----	-193	193	-----	-----	-----
USE OF PRIOR YEAR UNOBL BAL - (GC)DA	-30,113	-35,216	5,103	-30,113	-----	-30,113
USE OF PRIOR YEAR UNOBL BAL - (BCA)DA	-----	-203	203	-----	-----	-----
USE OF PRIOR YEAR UNOBL BAL - (OSBC)DA	-----	-7	7	-----	-----	-----
USE OF PRIOR YEAR UNOBL BAL - (IG)DA	-----	-290	290	-----	-----	-----
USE OF PRIOR YEAR UNOBL BAL - (CP)DA	-----	-916	916	-----	-----	-----
USE OF PRIOR YEAR UNOBL BAL - (OMBI)DA	-----	-81	81	-----	-----	-----
USE OF PRIOR YEAR UNOBL BAL - (OPS)DA	-----	-13	13	-----	-----	-----
A-76 STUDIES	-----	-3,753	3,753	-----	-----	-----
	-2,000	-----	-2,000	-2,000	-----	-2,000
TOTAL, DEPARTMENTAL ADMINISTRATION (NET)	177,814	164,243	13,571	177,814	179,159	-1,345
(OPERATING EXPENSES - NET)	170,652	158,266	12,386	170,652	179,159	-8,507
(PLANT AND CAPITAL EQUIPMENT - NET)	7,162	5,977	1,185	7,162	-----	7,162

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
ALASKA POWER O&M						
POWER MARKETING - ALASKA POWER ADMINISTRATION........	3,279	3,191	88	3,279	3,159	120
USE OF PRIOR YEAR BALANCES - (CE)APA................	-120	-165	45	-120	-----	-120
TOTAL, ALASKA POWER	3,159	3,026	133	3,159	3,159	-----
EFFECT OF PRIVATIZATION - APA.........................	-----	-----	-----	-----	-----	-----
PRIV. - SALE OF ASSETS - APA(NON-ADD)................	(-100,000)	-----	(-100,000)	(-100,000)	-----	(-100,000)
TOTAL, ALASKA POWER....................................	3,159	3,026	133	3,159	3,159	-----

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
BONNEVILLE						
POWER MARKETING - BONNEVILLE POWER ADMINISTRATION....	136,000	165,000	-29,000	136,000	136,000	-----
PERMANENT INDEFINITE BORROWING AUTHORITY(NON-ADD).....	-----	-----	-----	-----	-----	-----
TOTAL, BONNEVILLE POWER ADMIN.........................	136,000	165,000	-29,000	136,000	136,000	-----
EFFECT OF PRIVATIZATION - BPA (NON-ADD)...............	-----	-----	-----	-----	-----	-----
EFFECT OF PRIVATIZATION - BPA.........................	-----	-----	-----	-----	-----	-----
PRIV. - SALE OF ASSETS - BPA(NON-ADD).................	-----	-----	-----	-----	-----	-----
TOTAL, BONNEVILLE POWER ADMINISTRATION................	136,000	165,000	-29,000	136,000	136,000	-----

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
SOUTHEASTERN O&M						
POWER MARKETING - SOUTHEASTERN POWER ADMINISTRATION..	36,267	27,400	8,867	36,267	36,267	-----
USE OF PRIOR YEAR DEFERRALS..........................	-----	-----	-----	-----	-----	-----
TOTAL, SOUTHEASTERN O&M...............................	36,267	27,400	8,867	36,267	36,267	-----
EFFECT OF PRIVATIZATION- SEPA..........................	-----	-----	-----	-----	-----	-----
PRIV. - SALE OF ASSETS - SEPA(NON-ADD)................	-----	-----	-----	-----	-----	-----
TOTAL, SOUTHEASTERN O&M...............................	36,267	27,400	8,867	36,267	36,267	-----
SOUTHEASTERN CONT. FUND						
SOUTHEASTERN POWER - CONT. FUND......................	-----	-----	-----	-----	-----	-----
TOTAL, SOUTHEASTERN CONT. FUND........................	-----	-----	-----	-----	-----	-----

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ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
SOUTHWESTERN O&M						
POWER MARKETING - SOUTHWESTERN POWER ADMINISTRATION..	28,589	30,308	-1,719	28,589	28,589	-----
USE OF PRIOR YEAR BALANCES CS (SWPMA)...............	-13,200	-13,660	460	-13,200	-13,200	-----
SAVINGS FROM MANAGEMENT INITIATIVES - (CE)SWPA......	-----	-----	-----	-----	-----	-----
TOTAL, SOUTHWESTERN O&M..............................	15,389	16,648	-1,259	15,389	15,389	-----
EFFECT OF PRIVATIZATION- SWPA.........................	-----	-----	-----	-----	-----	-----
PRIV. - SALE OF ASSETS - SWPA(NON-ADD)................	-----	-----	-----	-----	-----	-----
TOTAL, SOUTHWESTERN O&M..............................	15,389	16,648	-1,259	15,389	15,389	-----
SOUTHWESTERN CONT. FUND						
SOUTHWESTERN POWER - CONT. FUND......................	-----	-----	-----	-----	-----	-----
TOTAL, SOUTHWESTERN CONT. FUND........................	-----	-----	-----	-----	-----	-----

DEPARTMENT OF ENERGY
FY 1989 CONTROL TABLE
(DOLLARS IN THOUSANDS)

BY APPROPRIATION

ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
WESTERN AREA O&M						
POWER MARKETING - WAPA O&M	295,928	292,997	2,931	295,928	254,505	41,423
USE OF PRIOR YEAR BALANCES	-----	-50,485	50,485	-----	-----	-----
GENERAL REDUCTION	-----	-----	-----	-----	-----	-----
TRANSFER FROM DOI	2,485	7,003	-4,518	2,485	-----	2,485
TOTAL, WESTERN AREA O&M	298,413	249,515	48,898	298,413	254,505	43,908
EFFECT OF PRIVATIZATION- WAPA	-----	-----	-----	-----	-----	-----
PRIV. - SALE OF ASSETS - WAPA(NON-ADD)	-----	-----	-----	-----	-----	-----
TOTAL, WESTERN AREA POWER ADMINISTRATION	298,413	249,515	48,898	298,413	254,505	43,908
WESTERN AREA POWER - EMERGENCY FUND						
WAPA EMERGENCY FUND	-----	24	-24	-----	-----	-----
TOTAL, WAPA EMERGENCY FUND	-----	24	-24	-----	-----	-----
COLORADO RIVER BASIN						
COLORADO RIVER BASIN (NON-ADD)	(84,000)	(87,000)	(-3,000)	(84,000)	(84,000)	-----
EFFECT OF PRIVATIZATION- CRB	-----	-----	-----	-----	-----	-----
TOTAL, COLORADO RIVER BASIN	-----	-----	-----	-----	-----	-----

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ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSR(88) BA	INCREASE/ DECREASE FROM FY89 CSR
FERC SALARIES AND EXPENSES						
OIL PIPELINE REGULATION	3,928	3,754	174	3,928	102,000	-98,072
NATURAL GAS REGULATION	49,089	46,623	2,466	49,089	-----	49,089
HYDRO POWER LICENSING	30,104	27,348	2,756	30,104	-----	30,104
ELECTRIC POWER REGULATION	23,639	22,275	1,364	23,639	-----	23,639
TOTAL, FERC	106,760	100,000	6,760	106,760	102,000	4,760
REVENUES	-----	-----	-----	-----	-----	-----
TOTAL, F E R C	106,760	100,000	6,760	106,760	102,000	4,760
REQUIREMENT FOR FERS	-----	-----	-----	-----	-----	-----
LESS PROPOSED PAY RAISE SUPPLEMENTAL	-----	-----	-----	-----	-----	-----
TOTAL, FERC SALARIES AND EXPENSES	106,760	100,000	6,760	106,760	102,000	4,760

SSC

Question 2: You have asked for $363 million this year for the SSC. Last year the administration promised that the SSC would be funded with "new money" and other science projects would not be cut to make way for the SSC.

Does your FY89 request fund the SSC with new money? We will have witnesses from the scientific community in hearings later this spring. Are they going to tell us that DOE is fully funding projects other than the SSC?

Answer: It is the Administration's position that funding for the SSC be provided in addition to existing support for research and development. In fact, when President Reagan first announced his support for the SSC he also called for a substantial increase in the budget of the National Science Foundation, which supports a broad range of science. The Administration's position is also reflected in the FY 1989 budget request to the Congress which clearly reflects that the SSC would not be constructed at the expense of other science programs. Excluding funding for the SSC in the five-year period between FY 1988 and FY 1993, there is still an increase in DOE's other basic science research activities of over 34 percent. In this same time period, the budget for the National Science Foundation is projected to increase by almost 76 percent. Likewise, the budget for the National Aeronautics and Space Administration between FY 1988 and FY 1993 is scheduled to increase by 67 percent. The Nation must increase its investment in science and technology if it is to remain economically strong and competitive in the future. It is well established historically that to have a healthy national scientific program, science must be appropriately supported across the board. One reason for this is that the long-term benefits of basic research are not predictable beforehand. Many of the most important scientific breakthroughs have been surprises. What is equally clear is that if the U.S. does not continue to push ahead in those areas where it has an established record of excellence, the potential scientific fruits of such research will not be available to future generations when needed.

Question 2, continued

Question: You said no "worthy" science project would be cut to fund the SSC. The budget does not include construction funds for the Relativistic Heavy Ion Collider, and the funds for the continuous electron beam accelerator facility are about $20 million below what they should be. Aren't these worthy projects?

Answer: Yes, CEBAF and RHIC are worthy projects and we believe that we have proposed a responsible budget to proceed simultaneously with CEBAF construction and R&D for the RHIC project in FY 1989. The Department had many complex priorities to consider within the Administration's overall FY 1989 funding guidelines; the funding levels requested for CEBAF and RHIC were developed independent of SSC considerations and were not set so that SSC could proceed. The FY 1989 funding request of $44.5 million for CEBAF construction, though less than the $65 million the contractor requested, is a significant increase above the $33.5 million appropriated in FY 1988 and provides for substantial construction progress in FY 1989. The Department is aware of the strong desire of the nuclear physics community to begin RHIC construction in FY 1989. However, when we considered initiating construction of this project against other needs in the nuclear physics program and in other programs, we concluded that it was more prudent to continue RHIC R&D and not seek construction funds in FY 1989. RHIC R&D is strongly supported in FY 1989.

SSC

QUESTION 3: How much hard cash do you think will come from foreign nations to contribute to the SSC? One billion out of the five billion estimated cost -- more? or less?

Do we really think that international collaboration will mean that a lot less will have to be appropriated for the SSC? How much less?

Isn't there a dilemma here? We want the SSC in order to keep U.S. science number one. Why would the Japanese, for example, pay money to help us stay ahead of them?

ANSWER: We have no basis to estimate how much hard cash will come from foreign nations. We are of the opinion that the equivalent of some 20 to 40 percent of the cost of the SSC can be obtained from non-federal sources, thus reducing significantly the amount that will need to be appropriated in future years.

The U.S. is showing its leadership in initiating the project but all participants will benefit. No other foreign country is technically or economically prepared to proceed independently, or to form a collaboration among countries at this time. Only a limited number of experimental facilities of this kind need or can be built in the world, and participation in one that is being built leaves open the possibility of construction of other complementary national facilities at later dates.

In addition, there could be reasons extending beyond the benefits of the project itself which contribute to a country's decision to participate. These include general foreign policy objectives, a desire to keep a specialized industrial sector employed, trade policy, and overall strategic policy relating to national roles in the international arena.

SSC

Question 4 The Administration recently announced that the naming of the "preferred" SSC site, from the seven finalists -- will be postponed.

You were going to select the preferred site in July. Now you won't do it until after Congress votes on the FY89 budget.

Some people think this is a belated attempt to keep at least 14 senators for the project instead of only two. Why have you delayed selection of the preferred site?

You have asked for a reprogramming of $8 million to support SSC site selection activities. This seems to be a lot of money for these kinds of studies. How would it be used in detail? If the $8 million is not provided how much will the site selection be delayed?

Answer: The preferred site selection date was delayed from July 1988 to the fall of 1988 in order to benefit from public comments on the draft Environmental Impact Statement (EIS) being prepared for this project and to allow additional time for evaluation.

The $8.0 million SSC site selection cost estimate for FY 1988 includes $5.44 million for preparation of environmental impact statements, $0.45 million for the life cycle cost analysis, $0.45 million for geological studies, $0.20 million for utilities analyses and real estate evaluation, $0.25 million for the NAS/NAE site evaluation committee, $0.15 million for a tunneling study by the NAS and $1.08 million for consultants, part-time clerical and administrative assistance, and computer services in support of the DOE site task force.

The Department is still evaluating options for dealing with the situation should the $8 million reprogramming not be approved. The options involve major delays in site selection or R&D, or a combination of delays in both activities.

SSC

Question 5: Freeman Dyson is a distinguished physicist who has done important work in lots of areas of physics, including high energy physics. He published an article in the February 1988 Physics Today urging an assessment of alternatives to the SSC. These would be accelerators using lasers to make electrons and positrons collide.

Have you looked at this article? Could you give us your position on it?

Answer: While Professor Dyson is an outstanding and respected theorist, he is not an accelerator expert (as he himself admits). He even points out that Andrew Sessler (who is a respected accelerator expert) disagrees with him. Inverse free-electron acceleration, as proposed by Professor Dyson, has been considered by the experts. Its usefulness is limited by synchrotron radiation to a few hundred GeV, well below SSC energies. As suggested by Professor Dyson, the Department is sponsoring research into advanced accelerator techniques. While these techniques will not be available for use on the SSC, they do represent the very long term future of high energy physics.

As you will recall in our testimony last year, we discussed the fact that there were reviews of this issue in 1985 by both a HEPAP subpanel and the JASON group. Both reviews reached similar conclusions that, while there were promising techniques being studied, these were not likely to be at the stage of development to serve as the basis for a high energy accelerator design for at least a decade. The HEPAP subpanel report noted that these advanced technologies do "not offer an alternative to present SSC plans." There have not been any breakthroughs in accelerator technology during the last few years that would alter the SSC design or provide an alternative. The Physics Today article does not offer any new information that would change the projections of when these new technologies will be ready for use in an accelerator. Thus, there is no basis to either change the design of the SSC or delay its construction.

Superconductivity R & D

Question 1 Last year when the news of new high-temperature superconducting materials was fresh, the President promised a strong program of support for superconductivity research. What portions of the President's FY89 budget request comprise this program? Please identify the support for superconductivity research in the Department of Energy budget request.

Answer: The President's FY 1989 budget request includes substantial funding for high temperature superconductivity. The program comprises mission-oriented applied and basic research. The National Science Foundation, the Department of Defense, and the Department of Energy have the largest portions and the Department of Commerce (National Bureau of Standards) and the National Aeronautics and Space Administration somewhat smaller efforts.

Within the Department of Energy, the FY 1989 request includes $16.6 million in Basic Energy Sciences, $6.7 million in Defense Programs, $2.0 million in Energy Utilization Research and $12.9 million in Electric Energy Systems and Energy Storage. Another $0.5 million is in Fossil Energy and High Energy Physics. Along with this request for $38.7 million in high temperature superconductivity is a request for $56.1 million in conventional low temperature superconductivity, important for present applications and needed to carry out DOE's energy research responsibilities.

Superconductivity R & D

Question2: For DOE and for the budget as a whole, provide a table showing the nature and amount of this support for fiscal years 1988 and 1989.

Answer: The following table represents the FY 1988 and FY 1989 funding for superconductivity by program:

High Temperature Research	FY 1988 (M$)	FY 1989 (M$)
Energy Research	15.3	16.9
Defense Programs	6.7	6.7
Fossil Energy	0.3	0.2
Conservation and Renewable Energy	4.9	14.9
Total, High Temperature	27.2	38.7
Low Temperature Research		
Energy Research	39.2	55.8
Bonneville Power Authority	0.2	0.3
Fossil Energy	0.3	0
Conservation and Renewable Energy	0	0
Total, Low Temperature	39.7	56.1
Total, Department of Energy	66.8	94.8

Superconductivity R & D

Question 3 The President pledged a strong effort in superconductivity research. In view of this pledge, how do you account for the statement in a recent letter to staff of this Committee that was signed by 65 leading physicists active in research in superconductivity that: "exactly the opposite has occurred. Leading university researchers in this field and indeed in solid state physics as a whole have had their budgets severely cut for 1988 ..." (see attached letter).

Answer: The Department of Energy's program in high temperature superconductivity has been increased substantially from $27.2 million in FY 1988 to $38.7 million in the FY 1989 request. In addition, the Department has reprogrammed funds in order to quickly strengthen the superconductivity program in response to the President's Superconductivity Initiative. Superconductivity Research Centers have been established and the department has also initiated a program to accelerate the transfer of this technology to the private sector. In the Department of Energy, our support for solid state physics in Basic Energy Sciences (BES) in FY 1988 increased by a modest 3.5 percent over the previous year. The letter referred to may be more appropriately directed toward other agencies. However, it is true that the non-superconductivity programs have decreased somewhat in order to emphasize the exciting new high temperature superconductivity area. This can be considered a normal shift in priorities and is necessary because of the many other commitments in the BES program including some imposed by the FY 1988 Congressional appropriations.

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ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
NUCLEAR WASTE FUND						
NUCLEAR WASTE FUND - OE	448,832	360,000	88,832	448,832	367,897	80,935
NUCLEAR WASTE FUND - PACE	-----	-----	-----	-----	-----	-----
NUCLEAR WASTE FUND	-----	-----	-----	-----	-----	-----
TOTAL, NUCLEAR WASTE FUND	448,832	360,000	88,832	448,832	367,897	80,935

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ACCOUNT TITLE	FY 1989 CONG REQUEST	FY 1988 IN FY89 STR B/A	INCREASE/ DECREASE FROM FY 88	FY 1989 CONG REQUEST	FY 89 CSB(88) BA	INCREASE/ DECREASE FROM FY89 CSB
GEOTHERMAL RESOURCES						
GEOTHERMAL RESOURCES DEVELOPMENT FUND................	75	72	3	75	76	-1
TOTAL, GEOTHERMAL RESOURCES...........................	75	72	3	75	76	-1

Energy Conservation

Question 1: Given that the Administration is asking the Senate to ratify the Montreal Protocol on Chlorofluorocarbon (CFC), why has the DOE program in CFC research been zeroed out?

Answer 1: Buildings and Community Systems will conduct CFC research in FY 1989 as a part of the building materials research program. The FY 1989 funding request for the building materials key activity is $300K. Research will focus on CFC substitutes and testing of non-CFC blown insulation.

Energy Conservation

Question 2:	The Northeast-Midwest Coalition sponsored, in cooperation with DOE, a display of energy conservation technologies in the Cannon Rotunda last week. Most of the exhibits were examples of technologies developed through DOE programs. DOE and DOE labs put together most of the displays. How many of these programs are targeted for termination or major decreases in funding?
Answer 2:	There were four displays at the Cannon Rotunda which reflected projects conducted within Industry Programs as follows:

Technology Area	FY 1988 Approp. ($ in thousands)	FY 1989 Request ($ in thousands)
1. Energy Audit and Diagnostic Centers (EADC)	$1,650	$0
2. Advanced Ceramics and Heat Exchanger Development	250	250
3. Thin Strip Casting	800	0
4. Impulse Drying of Paper	350	385

Two of the programs show reductions in funding. The EADC program provides for audits of small and medium sized companies and offers suggestions for reducing their consumption of energy in manufacturing operations. Although this is a very worthwhile effort, it is not research but a service which is available from professional energy engineers. It was decided to concentrate the available federal funding on higher priority research projects. State governments or the private sector can provide services similar to the audit services conducted under the EADC program. In the case of the thin strip casting project

(ARMCO/Westinghouse), funds have been allocated in FY 1988 to cover the research activities to the next project decision point (Oct. 1988). If the results are positive, unobligated funds from the Steel Initiative Program could be used to fund the next phase.

In the area of Transportation, two exhibits were on display:

Technology Area	FY 1988 Approp.	FY 1989 Request
	($ in thousands)	
1. Ceramic Technology Development Program and Ceramic Applications for the Automotive Gas Turbine Program	$23,500	$15,000
2. Electric & Hybrid Vehicle	14,100	5,600

Neither of the ceramic program areas is targeted for termination or major decreases in total funding. In FY 1988 a total of $23.5 million was appropriated for these technology development efforts. In FY 1989 a total of $15.0 million has been requested to continue work in these scientific fields; the federal fund decrease is attributed to increased industry cost-sharing, coupled with program redirection as developments occur. Industry cost-sharing has grown from minimal contributions when the programs were initiated to well over 20%, an amount in excess of $5.0 million. In addition, the U.S. ceramic industry reported that company-sponsored R&D expenditures had grown to a total of $152.9 million by 1986, and forecast increased outlays in the future.

The second exhibit provided information on the Electric and Hybrid Vehicle Program. The funding requested for this program in FY 1989 is $5.6 million compared with $14.1 million appropriated in FY 1988. Funding has been requested to continue the development of the three highest priority battery candidates having greatest probability of success for EV application; to complete the dual-shaft a.c. propulsion system program; and to test and evaluate EV technologies in the laboratory. Other technology developments, such as the single-shaft a.c. propulsion system program and the fuel-cell/battery hybrid powered bus program, have reached a stage where the private sector can continue development and commercialization on its own.

Seven displays reflected programs within the Buildings and Community Systems area:

Technology Area	FY 1988 Approp. ($ in thousands)	FY 1989 Request ($ in thousands)
1. Envelope Systems		
-- Walls & Foundations	$ 700	$ 0
- Roofs	700	300
- Standards & Guidelines	800	700
2. Windows	1,300	450
3. Heat Pumps	5,800	2,700
4. Lighting	2,250	1,000
5. Indoor Air Quality/ Inflitration & Ventilation	1,900	693

Research will be continued only in those high risk areas where the private sector is unable to assume responsibility. The decreases are proposed since research advancements indicate that the building industry should now be able to proceed with less government involvement.

It should be noted that the displays highlighted successful research projects, many of which have already led to commercial products. It is to be expected that federal funding should decrease as these research projects accomplish their goals.

What would be the budgetary effects of the following options concerning ERA and OHA?

Question 1: Transferring prosecution of the remaining oil overcharge cases to DOE's General Counsel's office, with auditors and other technical support consolidated within DOE's existing structure, and with adjudication transferred from OHA to FERC administrative law judges (ALJs)?

Answer 1: There would be no savings generated from such a transfer. DOE General Counsel (OGC) staff and FERC ALJs are currently fully utilized and have no additional resources available to undertake these new tasks. Therefore, ERA and OHA personnel would have to be transferred to OGC and FERC, respectively, with all the attendant reorganization costs. If only the function was transferred, substantial expenses would be incurred in retraining DOE OGC staff for these types of prosecutions, as well as hiring new personnel for both OGC and FERC to handle the increased workload. Such a transfer to FERC would also preclude an initial impartial review by the agency of these prosecutions, and require FERC to undertake a more extensive fact-finding examination than currently required by statute. Furthermore, OHA's remaining functions preclude any near-term reduction in resources.

Budgetary Effects of Options Concerning ERA and OHA

Question 2: Transferring oil overcharge prosecutions to the Office of Enforcement or Oil and Gas Litigation Branch of FERC for adjudication before FERC ALJs, with accounting and other technical support being integrated into kindred units within FERC's Office of Pipeline and Producer Regulation (OPPR) and Office of the Chief Accountant.

Answer 2: There would be no savings generated from such a transfer. FERC staff and ALJs are currently fully utilized and have no additional resources available to undertake these new tasks. Therefore, ERA and OHA personnel would have to be transferred to FERC with all the attendant reorganization costs. If only the function was transferred, expenses would be incurred in retraining FERC staff for these types of prosecutions, as well as hiring new personnel to handle the increased workload. Such a transfer to FERC would also preclude an initial impartial review by the agency of these prosecutions.

Budgetary Effects of Options Concerning ERA and OHA

Question 3: Assuming the above scenarios, transferring the gas and electric import programs, and the remaining fuels conversion program into OPPR and the Office of Electric Power Regulation (OEPR) of FERC.

Answer 3: There would be no savings created by such transfer. Current ERA personnel would have to be transferred or new personnel hired and trained, and current personnel in OPPR and OEPR retrained.

Budgetary Effects of Options Concerning ERA and OHA

Question 4: Assuming the above scenarios, transferring the management and administrative support functions of ERA and OHA to the relevant existing units within DOE and FERC.

Answer 4: There would be no savings and in all probability large costs entailed by such a transfer. DOE and FERC management and administrative staff are not in a position to manage new programs without additional resources. More importantly, OHA has built up an extremely effective and efficient administrative support system to process and control the tens of thousands of cases OHA adjudicates. Transferring this function to FERC would entail very significant personnel and equipment reinvestment.

Budgetary Effects of Options Concerning ERA and OHA

Question 5: Assuming the above scenarios, transferring OHA's oil overcharge refund program to FERC's Office of Chief Accountant, with support from FERC's producer regulation units of OPPR (which are winding down as a result of NGPA wellhead price deregulation and relaxed producer abandonment rules.)

Answer 5: Costs at FERC for administering the OHA oil overcharge refund program are likely to increase substantially. The oil overcharge refund program involves processing and analyzing thousands of individual refund applications (over 90,000 have been filed to date). Very extensive and expensive retraining of FERC personnel would be required, as well as retooling and reprocessing of equipment. In addition, the transition period would halt the processing of refund applications, the payment of refunds to deserving claimants, and the transfer of funds to the federal Treasury under the Petroleum Overcharge Distribution and Restitution Act.

Budgetary Effects of Options Concerning ERA and OHA

Question 6: Assuming the above scenarios, transferring OHA's hardship exceptions review to either DOE's General Counsel's Office, or FERC's OPPR and General Counsel's Office.

Answer 6: No cost savings would result from such a transfer. The exceptions review process constitutes only a small portion of OHA workload and hiring new DOE or FERC personnel or retraining existing personnel would not be cost effective.

Budgetary Effects of Options Concerning ERA and OHA

Question 7: Assuming the above scenarios, transferring all other OHA functions, such as FOIA and Privacy Act requests, to DOE's General Counsel's Office.

Answer 7: No cost savings would result because DOE OGC staff are currently fully utilized and either OHA staff would have to be transferred or new staff hired and trained. In addition, the impartiality and quality of the review of initial FOIA determinations would not necessarily be improved and would certainly be adversely affected in the near term. OHA reports directly to the Secretary and is not involved in advancing the views of other elements of the Department. As a result, OHA produces sound, reasoned decisions that are widely recognized as among the best FOIA determinations of any agency and are consistently upheld by the Courts. Moreover, OHA has an excellent record of meeting statutory deadlines in issuing these decisions, which has been cited with approval by the General Accounting Office. Transfer of these functions to DOE OGC will not reduce Departmental expenses in this area and would disrupt the proper review of FOIA and Privacy Act appeals.

Budgetary Effects of Options Concerning ERA and OHA

Question 8:	ERA's compliance program budget request for FY89 is $12.5 million, a decrease of only half a million dollars. Further, the program's staffing request projects decreases of only one attorney (from 66 to 65) and four auditors (from 39 to 35). Why should the program's monetary and staffing decrease be so mininmal in light of the recent settlement of the massive Texaco case, the projected resolution of a growing number of remaining small cases, and Chandler van Orman's estimate that a maximum of six new cases would be filed before the filing deadline?
Answer 8:	While it is true that the Texaco case should be settled by the beginning of FY 1989, ERA estimates that it will still have about 240 litigation cases as well as approximately 300 post-litigation matters (such as monitoring escrow payments and collecting delinquent accounts) remaining at that time. A staffing level of 65 attorneys will maintain ERA's historical case/attorney ratio of four. The 35 auditors are still needed to provide litigation and post-litigation support. To be sure, ERA intends to be responsible in managing its resources. When we realize a significant drop in our caseload we intend to reduce staffing levels accordingly. This is borne out by the fact that the enforcement program, which once had a staff of 2,000, is now down to 150 people. However, because of the uncertainity in predicting when settlements will occur or judgements will be handed down, we must keep sufficient staff until such time as we significantly reduce the caseload to warrant a reduction-in-force.

Budgetary Effects of Options Concerning ERA and OHA

Question 9: Senator Bingaman recently introduced S. 1973, a bill to restore natural gas import authority to FERC. Along with electricity import review, ERA's FY 1989 budget request for authorizing imports is $2.265 million, up fully 9 percent, including a $450,000 request to contract out for environmental impact statements. Doesn't FERC compile the same type of market data and conduct a similar market analysis for import applications as ERA?

Answer 9: When an application to import or export natural gas involves interstate commerce, FERC traditionally is the lead agency for EIS preparation. Nevertheless, NEPA requires both FERC and ERA to make independent environmental determinations. Once FERC completes its environmental analysis, ERA reviews FERC's analysis and issues its own determination. However, some proposed imports involve the construction of intrastate facilities and pipelines over which FERC does not have jurisdiction. Under these circumstances, ERA is required to prepare an EIS because it is the only federal agency with jurisdiction over the proposed action. It should be pointed out that there has been no instance where there has been a duplicative effort between ERA and FERC in conducting environmental studies, and the comparative costs between contracting out for performance of specific environmental analyses or employing additional federal employees are unclear.

FERC does not compile the same type of market data and conduct the same type market analysis as ERA. Most of the natural gas import or export applications reviewed by ERA do not involve interstate pipeline construction and are filed pursuant to Section 3 of the NGA; consequently, FERC has no jurisdiction nor regulatory responsibility to conduct market analyses.

As a condition to any import or export authorization approved by ERA, the importer or exporter must file quarterly reports indicating the details of each sales transaction, including volume and price, names of the sellers and purchasers, actual or estimated duration of the arrangements, transporters, points of entry or exit, markets served, and various information concerning specific contract provisions. After collecting, assimilating, and analyzing the data filed by the natural gas importers and exporters, ERA issues a comprehensive report, which is made available to FERC.

Budetary Effects of Options Concerning ERA and OHA

Question 10: Doesn't FERC have in-house environmental units that write environmental impact statements? Wouldn't it be less expensive to conduct these environmental reviews, routine for FERC staff, rather than contract out?

Answer 10: Yes, the FERC has in-house environmental units which handle natural gas and hydroelectric environmental issues. However, the current workload of both these organizations is such that contracting options are already being used to handle proposed projects.

Moreover, it is the FERC's experience that contracting out for environmental services is not necessarily more expensive. This is particularily the case when the workload exceeds the projected level for a temporary period.

FERC Chairman Hesse responded to a similar question from Senator Bingaman pursuant to her appearance before the Committee on March 3, 1988.

Budgetary Effects of Options Concerning ERA and OHA

Question: What do you believe are the policy reasons for restoring natural gas and electricity import and export authority to FERC?

Answer: Section 202(e) of the Federal Power Act regulates only the export of electricity; the importation of electricity is not regulated. Exports of electricity have occurred only in very modest quantities. Thus, the policy issues arise more frequently in connection with the import and export of natural gas.

Under the Department of Energy Organization Act, the Secretary of Energy was given authority to regulate natural gas and electricity imports and exports, formerly vested in the Federal Power Commission, in recognition that a policy official accountable to the President should have jurisdiction over international energy trade to the extent that regulatory decisions affect national and international energy policy, foreign policy, and national security interests. We believe that these policy considerations have not been mitigated in this era of increasing deregulation and continue to be at least as convincing as at the time of the DOE Organization act. The national and international policy ramifications of the decisions on natural gas and electricity imports and exports dictate that the decisions be sensitive to Administration policy and, under the existing arrangement, ERA coordinates its actions with the Policy and International Affairs offices of DOE, as well as with other governmental agencies, i.e., State Department, Defense Department, and Office of U.S. Trade Representative.

While the Commissioners individually may be sensitive generally to international and national considerations, the FERC is not organized in a manner which facilitates review of international arrangements. Because the FERC staff has the authority to initiate public actions before the Commission, their activities could seriously impact negotiations between governments and undermine their effectiveness. Furthermore, the coordinated decision-making approach utilized by the ERA is not feasible for an independent, collegial regulatory body. Moreover, under the FERC's procedures, once a hearing has been scheduled, the Commission, the administrative law judge and the FERC trial staff would be precluded from communicating off-the-record with other parts of the DOE, such as the Secretary and the Assistant Secretary for International Affairs, whose advice should be considered in these matters. The result would be that decisions having a substantial impact on our national energy and foreign policies would be made by persons who are precluded from discussing the effects of their decisions with the appropriate people.

The principal argument in favor of combining the various functions in a single agency is administrative efficiency, rather than for policy reasons. The function of authorizing the importation and exportation of natural gas under Section 3 of the Natural Gas Act is closely related to the function of authorizing the transportation and sale for resale of that gas in interstate commerce after it has been imported or before it has been exported, and the function of authorizing facilities, rates and tariffs to implement those transactions. These ancillary functions are performed under sections 4, 5 and 7 of the Natural Gas Act. These functions, in turn, are closely related to the regulation of the transportation and sale for resale of domestic gas under the same sections of the Natural Gas Act. Indeed, in many instances gas of domestic and imported origin are commingled in the same interstate stream of gas. Regulation of the transportation and sale for resale of imported gas (whether or not commingled with domestic gas) may also involve consideration of the pass-through in domestic rates and tariffs of costs (and the classification of costs into demand and commodity components) incurred in the country from which the gas was imported. Consolidation of these statutory functions in a single agency would reduce the potential for overlapping filings and multiple proceedings. It would also eliminate the potential for inconsistencies between the ERA and the FERC. (I would note to this regard, however, that during the ten years since enactment of the Department of Energy Organization Act the ERA and the FERC have avoided such inconsistencies.)

On the other hand, however, the ERA has adopted expedited procedures considering import and export applications which are more appropriate to the competitive natural gas marketplace. Use of the FERC's formal adjudicative procedures would be significantly more time consuming. Substitution of protracted regulatory hearings for the ERA market-oriented approach could constitute a de facto shift in policy by increasing impediments to imports.

Budgetary Effects of Options Concerning ERA and OHA

Question 12: Shouldn't FERC ALJs be familiar with oil overcharge program issues from FERC's appellate jurisdiction over these cases? What percentage of appeals of oil overcharge orders issued by DOE are appealed to FERC?

Answer 12 : The 22 FERC ALJs are familiar with the oil overcharge program issues as demonstrated by the following statistics. Since the responsibility of these appeals was transferred to the Chief ALJ in 1985, the ALJs have handled 121 such cases. Of these cases, 81 have been finally completed. With the assistance of an ALJ, settlements in principle have been tentatively agreed to in another 25 of the cases. One case is currently in active settlement negotiation. This leaves only 9 cases which are likely to be litigated. Seventy-two percent of the Remedial Orders issued by DOE during FY 87 and the first five months of FY 88 in the oil overcharge program were appealed to FERC.

Budgetary Effects of Options Concerning ERA and OHA

Question 13: What are the policy reasons for OHA separately retaining DOE's non-compliance type adjudications such as Freedom of Information Act (FOIA) and Privacy Act actions rather than transferring these functions to DOE's General Counsel's Office, as is the case with most federal agencies? Wouldn't this transfer cut down on separate and duplicative administrative and management costs now borne by OHA and the General Counsel's Office of DOE?

Answer 13: When the Department of Energy was organized, the decision was made to establish the Office of Hearings and Appeals as the focal point of all of the Department's adjudicatory activities. This determination was based upon the importance of these adjudicative functions and the need to have them carried out through a single, impartial body that reported directly to the Secretary and did not, for example, have other functions which involved advancing a view of another element of the Department. This decision has produced a single organized, consistent body of case law based upon sound, reasoned decisions. In fact, in the Freedom of Information Act and Privacy Act area which the question mentions, the decisions of the Office of Hearings and Appeals are widely recognized as being of judicial quality and better than most other agency FOIA determinations. These determinations have also been praised by the General Accounting Office for their timeliness and have been consistently upheld by the Courts. Because the OHA operations are not performed by the DOE Office of the General Counsel, there are no separate and duplicative administrative and management costs and no savings would result from any transfer of any of the OHA operations.

Budgetary Effects of Options Concerning ERA and OHA

Q. 14 You stated in testimony before the Committee that a legislative change may be necessary to transfer and consolidate the remaining oil overcharge program. Please request that your General Counsel's Office list and explain any statutes, regulations, or other authorities that would need to be changed to carry out the transfer and consolidation of functions suggested by the above questions.

The Committee's questions suggest the transfer of various functions of the Economic Regulatory Administration (ERA) to other Departmental elements. In addition, it is proposed that certain functions performed by the Office of Hearing and Appeals (OHA) be transferred to other Departmental elements. Our view is sought with respect to changes in statutes, regulations, and other authorities that would be needed to accomplish the proposed transfers of functions.

The Secretary has broad authority to transfer ERA or OHA functions to other Departmental elements. Legislation would be required only to the extent that transfer of such functions would result in the abolition of ERA.

Section 206 of the Department of Energy Organization Act (DOE Act) (42 U.S.C. § 7136) establishes "within the Department an Economic Regulatory Administration ...to administer such functions as... [the Secretary of Energy] may consider appropriate." OHA, on the other hand, is not mentioned in the DOE Act. Its predecessor, the Office of Private Grievances and Redress, was established by section 21 of the Federal Energy Administration Act (15 U.S.C. § 780). Upon enactment of the DOE Act, these functions were transferred to the Secretary, who administratively established OHA.

The Secretary, pursuant to section 642 of the DOE Act (42 U.S.C. § 7252), may delegate any function "[e]xcept as otherwise expressly prohibited by law, and except as otherwise provided in this Act... to such officers and employees of the Department as he may designate...." Moreover, the Secretary is authorized by section 643 of the DOE Act (42 U.S.C. § 7253)

> to establish, alter, consolidate or discontinue such organizational units or components within the Department as he may deem to be necessary or appropriate. Such authority shall not extend to the abolition of organizations units or components established by this Act, or to the transfer of functions vested by this Act in any organizational unit or component. (emphasis added)

Because the DOE Act is silent as to specific functions that must be performed by ERA or OHA, these Departmental components may administer only those functions delegated by the Secretary. The Secretary, through the issuance of Departmental Delegation Orders, delegates authority to Departmental officials, on a non-exclusive basis, to act with respect to specific matters. The current authorities of the Administrator, ERA, are set forth in Delegation Order Nos. 0204-4, 0204-25, 0204-54, 0204-77, 0204-86, 0204-104, 0204-111, and 0204-114. Authorities delegated to the Director, OHA, are contained in Delegation Order No. 0204-24.

We therefore believe that the Secretary has authority to transfer some, but not all, of ERA's functions, and any or all of OHA's functions to other Departmental components without additional statutory authorization. Of course, specific technical amendments to existing regulations and Department Delegation Orders would be required. We do note that in title III of the Omnibus Budget Reconciliation Act of 1986 (42 U.S.C. § 4501 et seq.) both OHA and the Administrator, ERA, were statutorily recognized. We believe the intent of these provisions is to require that certain information be furnished to the Congress and certain functions be performed, rather than to mandate the assignment of specific functions to specific organizations. A technical conforming amendment to these provisions would be desirable, should the Secretary transfer the authority to conduct subpart V proceedings from OHA to another Department component.

Questions 1 through 7 propose transfer of specified functions administered by ERA and OHA to other Departmental components. Specifically, it is proposed that the following ERA functions be transferred to the Federal Energy Regulatory Commission (FERC): the prosecution of remaining oil overcharge cases; the gas and electric import programs; the fuels conversion program; and certain management and administration functions.

Section 402(e) of the DOE Act (42 U.S.C. § 7173) provides:

> (e) in addition to the other provisions of this section, the Commission shall have jurisdiction over any other matter which the Secretary may assign to the Commission after public notice,..."

While section 402(e) contains a broad grant of authority to the Secretary to assign and delegate functions to FERC, section 503 of the DOE Act (42 U.S.C. § 7193) suggests a Congressional intent that the prosecution of oil overcharge cases be pursued by the Secretary or his "representative" within the Department, and that adjudication of cases involving a contest to a remedial order issued by the Secretary or his "representative" fall within the jurisdiction of FERC. While not statutorily prohibited, a combination of these functions within FERC may raise issues as to the independence, objectivity, and propriety of the adjudications.

In addition, transferring OHA's exceptions process to FERC could raise similar issues. Section 504 of the DOE Act (42 U.S.C. § 7194) requires the Secretary or designee to make such adjustments to DOE regulations as may be necessary to prevent hardship, inequity, or unfair distribution of burdens. FERC is assigned the responsibility to review any denials of such requests for adjustment. A combination of these functions within FERC raises similar questions of independence, objectivity and propriety as suggested above for ERA.

In the alternative, it is proposed that ERA's prosecution of remaining overcharge cases be transferred to the Office of the General Counsel, and certain management and administrative functions to other appropriate offices within the Department. It is our view that there are no statutory prohibitions to such proposed transfers of functions.

In addition, it is proposed that various functions presently performed by OHA be transferred. The Office of Hearings and Appeals' "exceptions review authority" may be transferred to FERC or the Office of the General Counsel, or to any other office deemed appropriate by the Secretary. Similarly, OHA's other functions, including review of Freedom of Information Act and Privacy Act requests, may be transferred to the Office of the General Counsel.

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